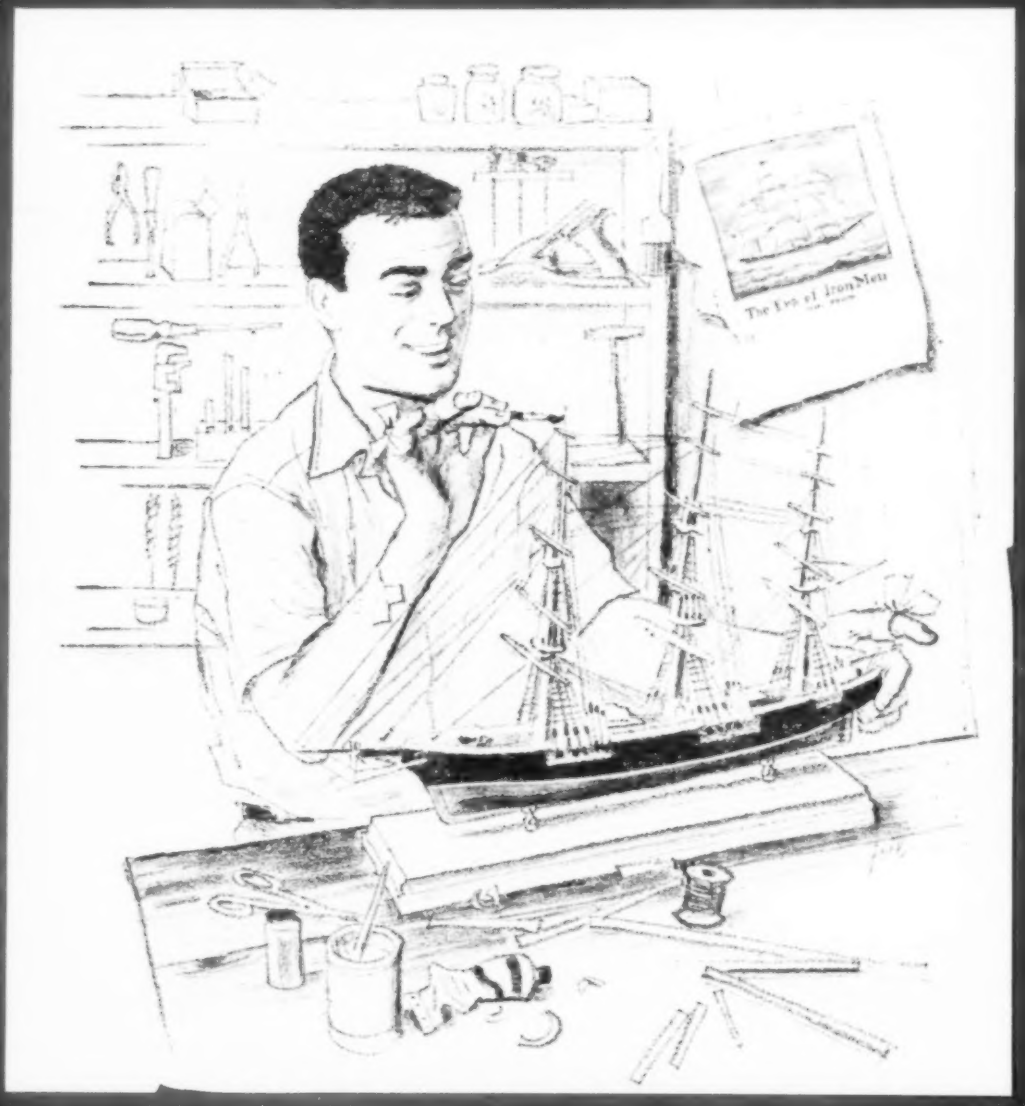
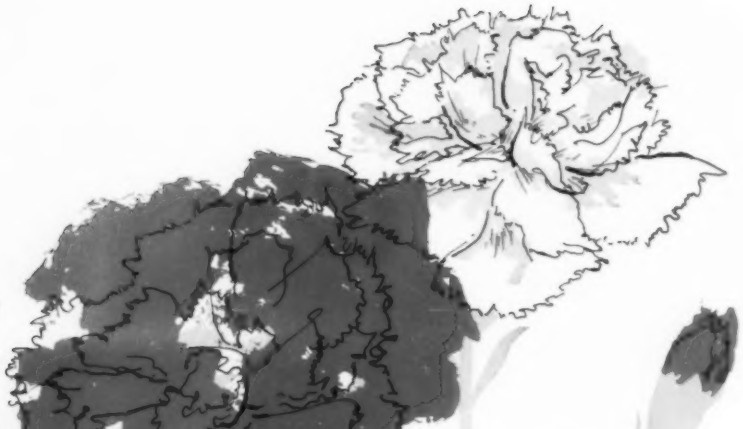
JULY 1955

Drug and Cosmetic Industry



including packaging and selling



NORDA does what Nature does . . .

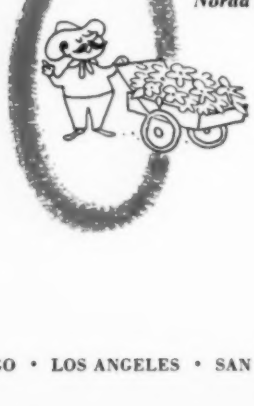
NORDA makes good scents

You know how Nature has given carnations a spicy difference. It's an unforgettable fragrance. Nature knows mysterious ways.

Norda, too, knows ways to create odors with subtle skills. Norda makes many an odor that would not make Nature unhappy.

Use Norda fragrances, and scents, and wonderful odors. Perfume your perfumed products with them. They will give fine quality to your deodorants and your new aerosol mists.

Norda knowledge can save money for you. Send your letterhead for convincing *free* Norda *samples.*



Always remember—
never forget . . .
Norda Makes Good Scents

Norda Essential Oil and Chemical Company, Inc.
601 West 26th Street, New York 1, N. Y.

CHICAGO • LOS ANGELES • SAN FRANCISCO • MONTREAL • HAVANA • LONDON • PARIS • GRASSE • MEXICO CITY

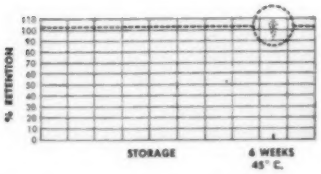
Why you should use

'ROCHE' { RIBOFLAVIN (vitamin B_2) / RIBOFLAVIN-5'-PHOSPHATE SODIUM

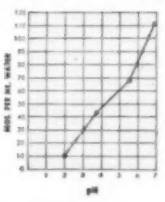
With the varied requirements for vitamin products in mind, Roche has developed three types of riboflavin to meet your formulating needs. As with all Roche vitamins, there are good reasons why you should specify riboflavin *'Roche'*. These again prove the wisdom of our statement: "It pays to stay with the leader."

THREE TYPES. Roche makes three types of riboflavin, each of which has special advantages for pharmaceutical manufacturers.

- **RIBOFLAVIN 'ROCHE'—REGULAR.** Especially useful for powdered dietary supplements, pharmaceutical tablets, soft gelatin capsules and dry enrichment premixes.
- **RIBOFLAVIN 'ROCHE'—SOLUTIONS TYPE.** For use in parenteral solutions which approach or slightly exceed the maximum solubility of B_2. Less likely to crystallize out.
- **RIBOFLAVIN-5'-PHOSPHATE SODIUM 'ROCHE'.** An original Roche development. Preferred for all solutions because it is rapidly and highly soluble. Better taste . . . no bitter after taste. Eliminates need for solubilizers. Specially valuable for highly concentrated oral and parenteral multivitamin solutions (with or without ascorbic acid), elixirs, syrups, water dispersible multivitamin formulations in capsules, tables, lozenges. Theoretical B_2 content: 73%. Roche product: 70-73%.



STABILITY in B-complex parenteral solutions with or without vitamin C.



SOLUBILITY in water at different pH levels; room temperature.

A. QUALITY. All riboflavin 'Roche' (Regular and Solutions Type) meets U.S.P. requirements. Riboflavin-5'-Phosphate Sodium 'Roche', for which no U.S.P. standards exist, meets the exacting production controls established by Roche for all of its vitamins. Roche uses its own synthesis in the manufacture of riboflavin.

B. UNIFORMITY IN COLOR. Uniform color of each type is maintained in Roche manufacturing.

C. STEADY SUPPLY. Roche makes vitamins, including riboflavin, by the tons. You are sure of steady supplies.

D. QUICK DELIVERY. Every order receives prompt, careful service from convenient points. Transportation at lowest rate allowed and prepaid to destination. Special routings at cost.

E. PACKAGING. Packed in polyethylene bags in ½ and 1 kilo tamperpruf metal containers and in fibre drums up to 20 kilos. Small quantities in amber s.c. glass bottles.

F. LEADERSHIP. Because of its position as a world-leader in research and production of vitamins you can rely on Roche.

G. NEED SAMPLES? Ask your Roche salesman or write the Vitamin Division for samples and technical literature.

CALL ROCHE FOR VITAMINS

Vitamin Division • HOFFMANN-LA ROCHE INC. • Nutley 10, New Jersey

NUtley 2-5000

Pacific Coast distributor: **L. H. BUTCHER COMPANY, San Francisco • Los Angeles • Seattle • Portland • Salt Lake City**

In Canada: **Hoffmann-La Roche Ltd., 286 St. Paul Street, West; Montreal, Quebec**

Drug and Cosmetic Industry

July 1955 Vol. 77 No. 1

feature articles

33 **The Doctor and the Pharmaceutical Manufacturer**
by William B. Hildebrand, M.D.

36 **Emulsified Lotions**
by Joseph Kalish, Ph.D.

38 **A.P.M.A. Meeting**

40 **Polio and Politics**

41 **Acid Cosmetics**
by Harry Hilfer

42 **The Acid Mantle Factor in Topical Application**
by Irwin I. Lubowe, M.D.

44 **A Study of Anti-Dandruff Agents**
by Herbert J. Spoor, Ph.D., M.D.

46 **Riboflavin Formulations**
by P. E. Brumfield and H. M. Gross

49 **Packaging and Selling Section**

53 **More Buying Appeal for Cosmetic Bottles**
by Harrison Young

55 **Selecting a Closure**
by Frank S. Child

departments

25 **Keeping Posted**
by Thomas R. Farrell

59 **Packaging and Selling**
by Frazer V. Sinclair

64 **Doin's**

69 **Patent Thoughts and Trends**
by Thomas Cifelli, Jr.

73 **News**
by Frank S. Child

85 **Management Forum**
by Francis Chilson

95 **Compounder's Corner**
by Joseph Kalish, Ph.D.

99 **Advancing Therapy**
by Joseph Kalish, Ph.D.

103 **Perfumer's Shelf**
by Joseph Kalish, Ph.D.

107 **Skin Research**
by Joseph Kalish, Ph.D.

113 **Readers' Questions**
by Joseph Kalish, Ph.D.

115 **Industry's Books**
by Harry G. Kelbly

116 **Trade Literature**

THOMAS R. FARRELL, *Editor*
FRANK S. CHILD, *Managing Editor*
JOSEPH KALISH, Ph. D., *Technical Editor*
HARRY G. KELBLY, *Raw Material Editor*
FRANCIS CHILSON, *Production Consultant*
MAX FRANKEL, *Art Director*

Drug & Cosmetic Industry is published monthly by Drug Markets, Inc., Frazer V. Sinclair, President and Treasurer; Thomas R. Farrell, Vice-president and Secretary. Editorial and General Office: 101 West 31st St., New York 1. N. Y., U. S. A. Publication Address: Sun Printing Corp., 28 Renne Ave., Pittsfield, Mass., U. S. A.

Reprints of cover illustrations are available on request.

Business Manager, Frazer V. Sinclair; Advertising Manager, P. W. Alexander; Advertising Representatives, Walter M. Brauneiss, C. R. Keeley; Production Manager, Katherine Hyde; Circulation Manager, Harry G. Kelbly.

Midwestern Advertising Representative: Dwight Early and Sons, 100 No. LaSalle St., Chicago 2, Telephone, CEntral 6-2184.

Subscription price $3.00 a year, in advance. Foreign Countries, $5.00. Single copies, 35c; Back issues 50c. Entered as Second Class Matter, January 1, 1928 at the Post Office at Pittsfield, Mass., under the Act of March 3, 1879. Member of Audit Bureau of Circulations.

Contents Copyrighted 1955
by Drug Markets Inc.

Your FLAVOR SUPPLIER *is a* SPECIALIST

He performs important services for you.

He knows what type of flavor will appeal to the public.

He has a practical knowledge of your manufacturing requirements.

He is trained to help you to improve your products and develop new ones.

Leading flavor houses have been using ZIMCO, the Original Pure Lignin Vanillin for many years.

They report, "There is nothing finer."

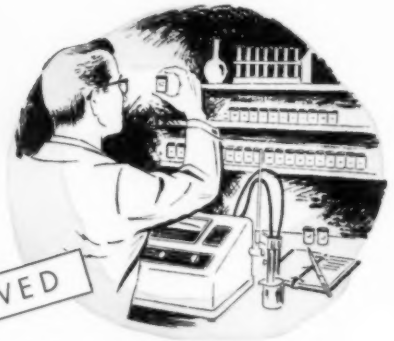
Sterwin Chemicals INC.
SUBSIDIARY OF STERLING DRUG INC.
1450 Broadway, New York 18, N.Y.
2020 Greenwood Ave., Evanston, Ill.

WORLD'S LARGEST SUPPLIERS OF VANILLIN

Merck Vitamin B_{12}

BY PURCHASING:

"We like buying vitamin B_{12} from Merck. They make five different forms, to meet all needs . . . and deliver quickly."



BY PRODUCT DEVELOPMENT:

"Merck certainly keeps us up to date on new developments . . . and their technical service has helped us on some tough formulation problems."

BY PRODUCTION:

"With Merck's capacity to supply, we can really plan tight production schedules. And Merck B_{12} is so uniform, we get along fine with quality control."

BY SALES:

"Merck showed us how to improve our B_{12} product to boost consumer acceptance. Besides, we like the way Merck stimulates professional appreciation of all vitamin products through special promotion."

Merck—*First in Vitamins*

Research and Production for the Nation's Health

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

© Merck & Co., Inc.

to give your cosmetic products

- ✓ ***exceptional purity!***
- ✓ ***excellent stability!***
- ✓ ***outstanding odor and color resistance!***
- ✓ ***longer shelf life!***

Creams, hair oils, hair dressings, suntan oils . . . whatever your cosmetic product . . . the White Oil you use should be fortified with Vitamin E to assure greatest stability against odor and color development. Now Sonneborn Research Laboratories have developed and patented a Vitamin E-fortified white oil—CARNATION White Mineral Oil—to help make your finished product better . . . keep it factory fresh.

Give your cosmetic product the stability, the superior shelf life, the greater customer satisfaction—which CARNATION White Oil can help assure.

Why take chances when protection costs no more! Insist on Sonneborn CARNATION White Oil fortified with Vitamin E!

Achieved by
Sonneborn
RESEARCH

L. SONNEBORN SONS, INC.
New York 10, N. Y.

THERE'S *Design* IN FR

IN FRAGRANCE TOO!

Modern design is important in the development of any new fragrance if it is to be successful in today's market.

It must first be designed as a thing of beauty in itself . . .

It must be designed to diffuse properly, to last effectively and remain unchanged . . .

It must be designed to appeal to its intended clientele . . .

It must be designed, cost-wise, to suit marketing requirements.

In selecting your next perfume, seek the guidance of capable and knowing designers of fragrance.

MANUFACTURERS AND CREATORS OF THE FINEST PERFUME MATERIALS

Van Ameringen · Haebler, Inc.

521 WEST 57th STREET NEW YORK 19, N. Y.

Bouquets to You
With
Florasynth's
BOUQUET 1950
Bouquet 1950 is the modern interpretation to a fresh, modern scent . . . the search for the new and intriguing . . . distinctly different . . . timed for successful products . . . all-ways . . .

Florasynth LABORATORIES, INC.
CHICAGO 6 · NEW YORK 61 · LOS ANGELES

DALLAS 1 · DETROIT 2 · MEMPHIS 1 · NEW ORLEANS
ST. LOUIS 2 · SAN BERNARDINO · SAN FRANCISCO
Florasynth Labs. (Canada Ltd.)
Montreal · Toronto · Vancouver · Winnipeg
Florasynth Laboratories de Mexico S. A. — Mexico City

Enthusiastically Received

By company officials, sales managers, new products managers, research directors, key personnel in medical, advertising, control, production, and purchasing departments

Seldom has a publication been so enthusiastically received as THE MERCK MEMO. It is a new service to Pharmaceutical Manufacturers—helping you to develop and promote your products.

Comprising only six pages, it packs—in a few words—dozens of facts of immediate interest to everybody associated with the pharmaceutical industry. Regular features include:

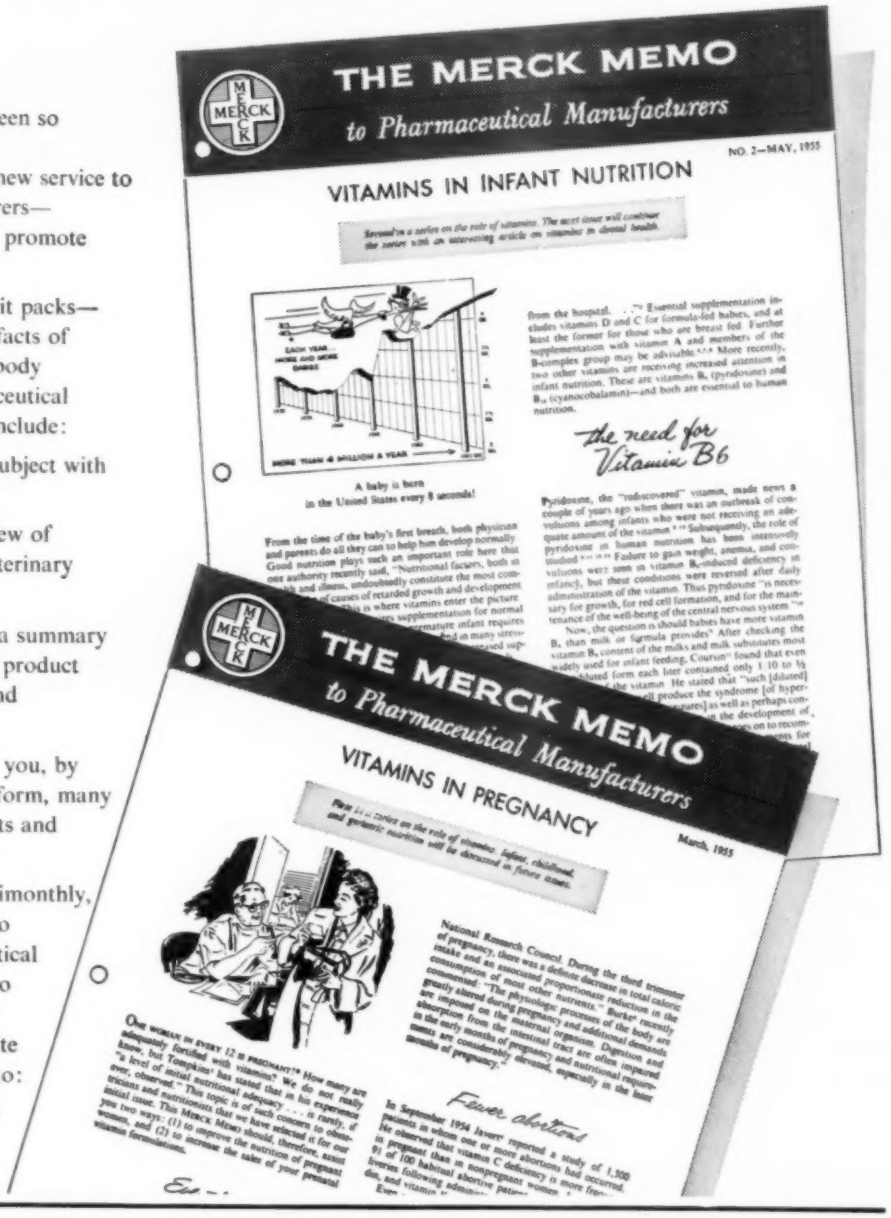
Survey Article on a timely subject with an extensive bibliography.

Abstracts culled from a review of hundreds of medical and veterinary journals.

Pharmaceutical Highlights—a summary of spot news in the fields of product development, production, and analytical control.

Literature Service—bringing you, by convenient post card order form, many useful and up-to-date reprints and abstracts.

THE MERCK MEMO, issued bimonthly, is available without charge to executives in the pharmaceutical industry. If you would like to receive a copy, contact your Merck representative, or write on your business letterhead to: Merck & Co., Inc., Rahway, N. J., Dept. DC-7.


THE MERCK MEMO
to Pharmaceutical Manufacturers
NO. 2—MAY, 1955
VITAMINS IN INFANT NUTRITION
A baby is born in the United States every 8 seconds!
the need for Vitamin B6
THE MERCK MEMO
to Pharmaceutical Manufacturers
VITAMINS IN PREGNANCY
March, 1955

Research and Production for the Nation's Health

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

© Merck & Co., Inc.

spotlight on

color stability

in stearic acid

how Emersol 132 Lily gave lighter-colored esters for cosmetics and toiletries

If your manufacturing process involves prolonged heating or exposure to high temperatures, then this actual experience may help solve your problems: *Case History No. 12-41 . . . Because of the higher purity associated with lighter-colored products, this well-known manufacturer of esters was approached for lighter-colored monostearates for use in cosmetics, toiletries, and similar type products. Since esters are exposed to high temperatures during manufacturing, this producer's logical approach was to investigate the color stability of his ingredients. On checking various stearic acids, he found that the outstanding color stability of Emersol 132 Lily gave him exceptionally light-colored monostearates, far better than those from all others tested. And since Emersol 132 costs no more than competitive triple-pressed grades, this extra "sales-appeal" cost him nothing.*

Your use of Emersol 132 Lily will also make your products lighter-colored. In addition, it will also make them more resistant to rancidity, more stable to oxidation and yellowing during storage and use. The end result is products that are more appealing, will stay appealing longer, and be much easier to sell . . . and at no extra cost to you. So, the next time you need a stearic acid, buy the EMERSOL brand, available only from Emery.

Emery

Fatty Acids & Derivatives
Plastolein Plasticizers
Twitchell Oils, Emulsifiers

Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio

New York; Philadelphia; Lowell, Mass.; Chicago; San Francisco; Cleveland; Ecclestone Chemical Co., Detroit
Warehouse stock also in St. Louis, Buffalo, Baltimore and Los Angeles
Export: 2205 Carew Tower, Cincinnati 2, Ohio

EVEN YOUR GENIE KNOWS!

IT'S NYQ FOR

MINOR SALICYLATES

Increasing use of the minor salts of Salicylic Acid is becoming more apparent today. Contact N.Y.Q. — the basic manufacturer of *quality* minor salicylates!!

A few examples of current production:

POTASSIUM SALICYLATE **AMMONIUM SALICYLATE** **SALICYLAMIDE**
LITHIUM SALICYLATE **STRONTIUM SALICYLATE** **CALCIUM SALICYLATE**
MAGNESIUM SALICYLATE

P. S. *Tonnage stocks of* **MAJOR** *salicylates also available.*

The NEW YORK QUININE & CHEMICAL WORKS, Inc.

GENERAL OFFICES:
50 Church Street, New York 8, N. Y.
729 West Division Street, Chicago 10, Illinois

FILL IN THIS COUPON FOR FURTHER DATA AND SAMPLES

Please send samples of.....
Name.....
Address.....
City.....Zone....State.....

LET'S GET DOWN TO "Essentials"

Felton Quality Control starts right back at the prime source. That's why discriminating users consider the Felton Essential Oils listed here always the best dollar values offered.

- ☐ Almond
- ☐ Anise
- ☐ Bay
- ☐ Bergamot
- ☐ Birch
- ☐ Bois de Rose
- ☐ Cananga
- ☐ Cassia
- ☐ Cedarleaf
- ☐ Cedarwood
- ☐ Cherry Laurel
- ☐ Cinnamon
- ☐ Citronella
- ☐ Clove
- ☐ Copaiba
- ☐ Coriander
- ☐ Eucalyptus
- ☐ Geranium
- ☐ Grapefruit
- ☐ Guaiacwood
- ☐ Labdanum
- ☐ Lavandin
- ☐ Lavender
- ☐ Lemon
- ☐ Lemongrass
- ☐ Limes
- ☐ Orange
- ☐ Patchouly
- ☐ Peppermint
- ☐ Petitgrain
- ☐ Pimenta
- ☐ Rosemary
- ☐ Sage
- ☐ Sandalwood
- ☐ Spike
- ☐ Spearmint
- ☐ Thyme
- ☐ Vetivert
- ☐ Wintergreen
- ☐ Ylang Ylang

GET IN TOUCH WITH US NOW FOR LATEST QUOTATIONS!

AROMATICS • PERFUME BASES • ESSENTIAL OILS

FELTON CHEMICAL COMPANY, INC.
599 Johnson Ave., Brooklyn 6, N. Y.

PLANTS: BROOKLYN, N. Y. • LOS ANGELES, CAL. • MONTREAL, QUE. • PARIS, FRANCE
SALES OFFICES: ATLANTA • BOSTON • CHICAGO • DALLAS • PHILADELPHIA
ST. LOUIS • TOLEDO • TORONTO
STOCKS CARRIED IN PRINCIPAL CITIES

EGGNOG NO. 6
TAMARIND FANTAISIE

Two imitation Flavors worth attention for your pharmaceutical specialties

Try them in tablets, pills, syrups, etc. and see what they can do for your products

ASK FOR SAMPLES AND QUOTATIONS

Ph. Chaleyer, Inc.

160 EAST 56th STREET, NEW YORK 22, N.Y. Plaza 3-8618

SEE HOW STATIC CHARGE DROPS!

Each hair specimen was charged by contact with a revolving disc on a rotating modulator. The voltage generated in each case was measured by a high-gain oscilloscope.

Laboratory Evidence Shows . . . TRITON X-400 Halves Static Electricity in Hair

The problem of static electricity in the hair can be solved by using TRITON X-400 as the base for cream hair rinses.

This fact has now been established by comparative tests conducted in the Rohm & Haas laboratories. The voltage on untreated hair was found to be 400 volts per square inch of rubbed surface. By contrast, potential dropped all the way to 200 volts per square inch of rubbed surface when the specimen was treated with TRITON X-400. With this 50% lower charge, it is calculated that hair becomes 4 times more manageable.

There are many other advantages in using TRITON X-400. Combing is easier, and hair stays in place. TRITON X-400 also makes hair substantially softer and more lustrous. What's more, it imparts these fine lubricating characteristics without being greasy.

Based upon a cationic quaternary ammonium compound and a higher alcohol, TRITON X-400 is a heavy paste that's easy to formulate. Perfuming, coloring, or acidifying agents can be incorporated in the final mix.

Try TRITON X-400 in your cream hair rinse formulations now. See your Rohm & Haas representative or write direct for test samples.

TRITON is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.

CHEMICALS FOR INDUSTRY

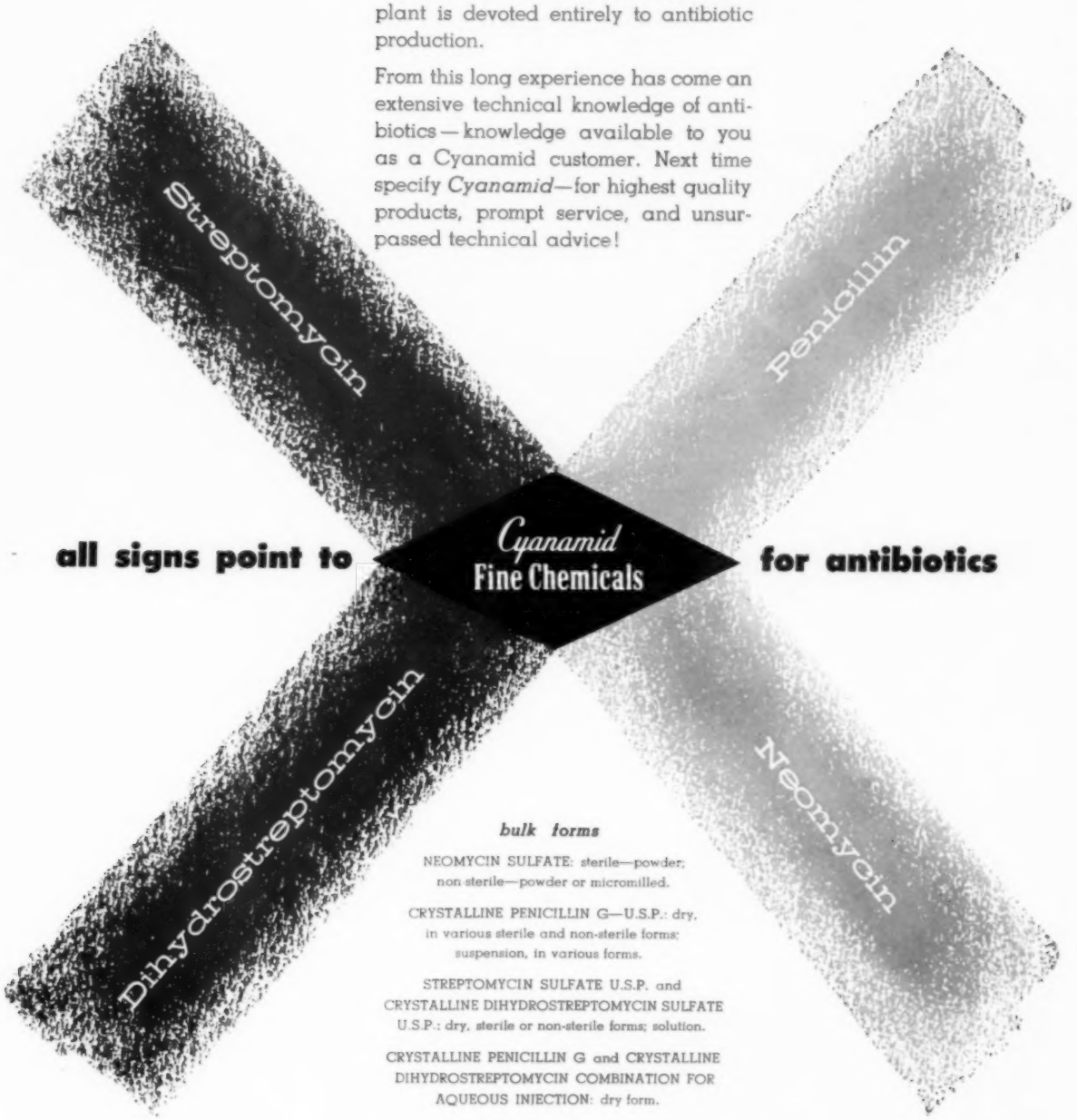
ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

Antibiotics have long been a Cyanamid specialty. Some of the outstanding advances in this field have been accomplished in the various Cyanamid laboratories. One modern Cyanamid plant is devoted entirely to antibiotic production.

From this long experience has come an extensive technical knowledge of antibiotics—knowledge available to you as a Cyanamid customer. Next time specify *Cyanamid*—for highest quality products, prompt service, and unsurpassed technical advice!



bulk forms

NEOMYCIN SULFATE: sterile—powder; non sterile—powder or micromilled.

CRYSTALLINE PENICILLIN G—U.S.P.: dry, in various sterile and non-sterile forms; suspension, in various forms.

STREPTOMYCIN SULFATE U.S.P. and CRYSTALLINE DIHYDROSTREPTOMYCIN SULFATE U.S.P.: dry, sterile or non-sterile forms; solution.

CRYSTALLINE PENICILLIN G and CRYSTALLINE DIHYDROSTREPTOMYCIN COMBINATION FOR AQUEOUS INJECTION: dry form.

AMERICAN *Cyanamid* COMPANY
FINE CHEMICALS DIVISION
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

American Distilled Oils

Produced at our Brooklyn Factory

OILS

CLOVE	STYRAX	GERANIOL	PIMENTO
NUTMEG	CASCARILLA	CITRONELLOL	OLIBANUM
ORRIS LIQUID, Conc.	BALSAM PERU	OPOPONAX	SANDALWOOD
	CELERY		PATCHOULY

also LINALOOL • CITRAL • EUGENOL • RHODINOL

RESIN LIQUIDS

OLIBANUM	ORRIS	STYRAX
LABDANUM	BENZOIN	BALSAM PERU
OPOPONAX	TONKA	BALSAM TOLU

Essential Oils • Aromatic Chemicals • Perfume Materials • Colors

70 *Years of continuous quality service — suppliers and manufacturers of*

Essential Oils • Aromatic Materials • Flavors • Colors

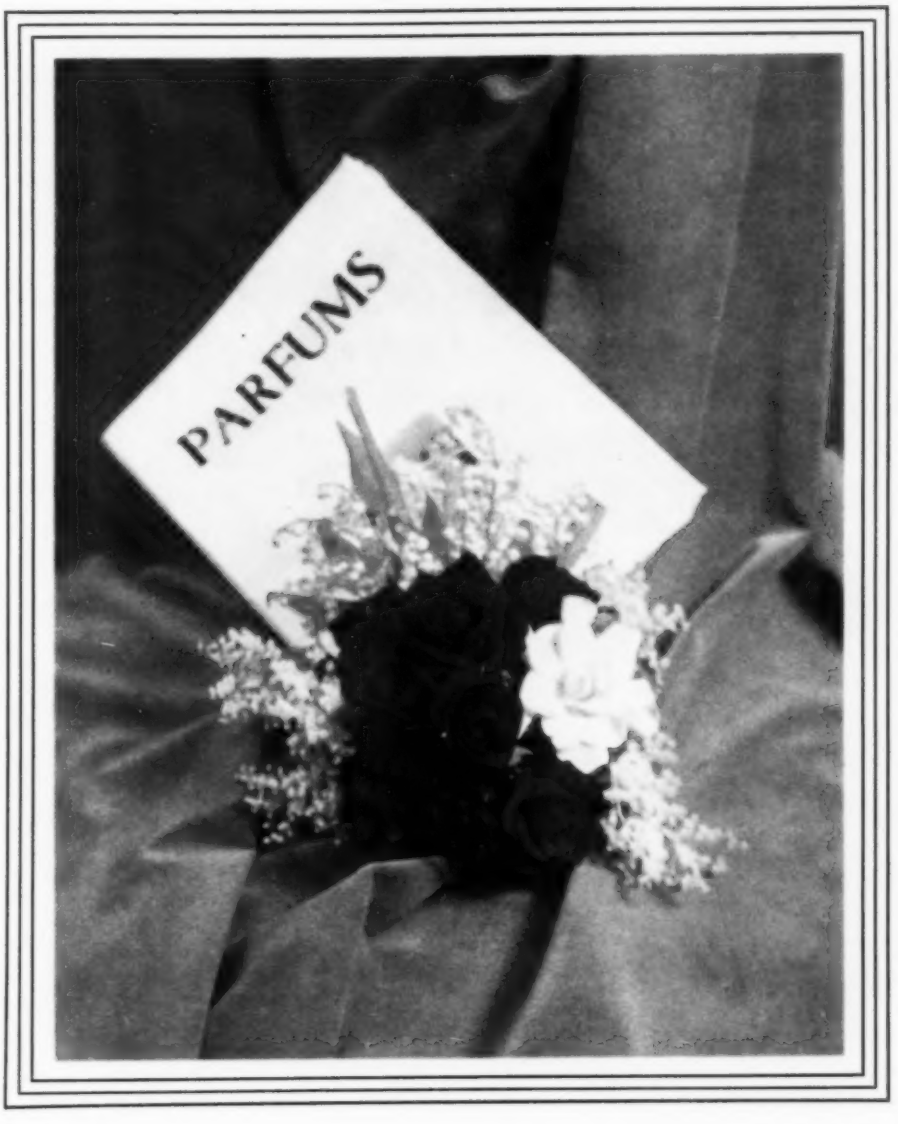
GEORGE LUEDERS & CO. NEW YORK GL REGISTERED TRADE MARK

GEORGE LUEDERS & CO.

427 WASHINGTON ST., NEW YORK 13, N. Y.

Chicago • San Francisco Montreal • Philadelphia • Toronto

Established 1885



Roure-Dupont, Inc.

PLEASE ☞
TURN THE PAGE

MASTERPIECES *Roure-Dupont, Inc.* IN PERFUMERY

FOR THE PERFECT FRAGRANCE CUSTOM-MADE FOR YOU, CONSULT

Roure-Dupont, Inc.

SINCE 1820 MAKERS OF THE FINEST PERFUMES

Sole Agents in the United States and Canada
FOR
SOCIÉTÉ ANONYME DES ÉTABLISSEMENTS
ROURE-BERTRAND FILS et JUSTIN DUPONT
GRASSE, FRANCE

Essential Oils · Aromatic Products · Perfume Bases

ROURE-DUPONT, INC.
366 Madison Avenue
New York, N. Y.
VANDERBILT 6-5830

ROURE-DUPONT, INC.
510 North Dearborn
Chicago, Illinois
SUPERIOR 3881

ROURE-DUPONT, INC.
5517 Sunset Boulevard
Hollywood, Calif.
HOLLYWOOD 3-5059

● *And uniform savings for you!* For any variation in the beeswax base of your chemical, pharmaceutical or cosmetic preparations can cause additional expense in your laboratory and plant—and lost sales at your dealers' counters.

Natural refined beeswax is a small fraction of your total product cost. Yet the unchanging purity, texture and whiteness of Beehive Brand Beeswax can be the big help in keeping your product up to the high standards you have set.

FREE CONSULTATION SERVICE

The experimental data and practical manufacturing experience of over a hundred years' specialization in beeswax and beeswax compounds are at your service without cost or obligation. Write us about your beeswax problems.

WILL & BAUMER
Candle Co., Inc.
Syracuse, N. Y. **Established 1855**

SPERMACETI • CERESINE • RED OIL • YELLOW BEESWAX • COMPOSITION WAXES • STEARIC ACID • HYDISTEAR

Outstanding Quality, Service and Supply

make CSC RIBOFLAVIN U.S.P.

the Product of Choice!

FOR BOTH LIQUID AND DRY PREPARATIONS

CSC Riboflavin U.S.P. is a product of exceptionally high purity. It has found wide acceptance over a number of years for elixirs, injectable solutions, powdered supplements, multi-vitamin drops, capsules and dry preparations. It is non-hygroscopic and exhibits unusual uniformity of crystals. Uniformity of color and complete freedom from odor have always been outstanding characteristics of riboflavin produced by CSC's unique quality-controlled process.

Since CSC is a primary producer of this important product, you are assured of a constant supply at all times—quickly furnished you from a distribution point located nearby. Available in 100, 1000 and 5000-gram containers.

Samples available as well as a detailed TECHNICAL DATA SHEET. Write for yours today on your company letterhead. Industrial Chemicals Sales Dept., Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.

CSC

COMMERCIAL SOLVENTS

260 Madison Avenue **CORPORATION** New York 16, N. Y.

SWIFT TAKES THE RED OUT OF...

RED OIL

Typical of the strictly controlled processes by which all of Swift's Industrial Oils are produced, is a special low temperature solvent treatment used to permit selective extraction of color bodies from Swift's Red Oils. This process lends unique qualities and uniformity of specifications to Swift's Red Oils and is one of the reasons why they are so widely depended upon for unusual, as well as commonplace uses.

If you are producing a product or have an application where uniform quality and "application" purity demand an extremely clear, distilled fractionated fatty acid, you should investigate Swift's OLEIC ACID NO. 905. It has the versatility and prime characteristics of a high quality red oil—but with a very low titer, high acid number and exceptional clarity and color stability.

Backed by a nationwide network of warehouse and storage facilities, Swift's Red Oils are readily available, many from stock. Why not write for further details—Today!

Stearic Acid
Oleic Acid (Red Oil)
Coconut Fatty Acid
Vegetable Fatty Acids
Sulfonated Oils
Monoglycerides
Emulsifiers
Animal Fatty Acids
Hydrogenated Glycerides
Hydrogenated Fatty Acids
Spermaceti USP

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

Swift
CENTENNIAL
1855 1955
TO SERVE INDUSTRY BETTER

USE THIS COUPON FOR FURTHER INFORMATION

Swift & Company, Industrial Oil Dept. O-85
1836 165th Street
Hammond, Indiana

Please send data on the following products:

_____

☐ Send folder on Swift's Red Oils.

*Name*_____ *Title*_____

*Company*_____

*Address*_____

*City*_____ *Zone*_____ *State*_____

WHEN KOLAR MANUFACTURES FOR YOU

No one else is the Wiser

Consumers of Kolar-manufactured cosmetics number many millions—but no consumer ever connects Kolar with their production.

Famous brand name cosmetics manufactured by Kolar from valuable formulas are numerous — but so far as anyone else knows they are produced and distributed from the label owner's own laboratories, and the formula secrets are strictly guarded. **Everything we do is completely confidential.**

Yet you PROFIT GREATLY

Not only is no one else the wiser when Kolar takes over any part or all of your manufacturing, but our 43 years of experience as manufacturing cosmetic chemists assures you these advantages:

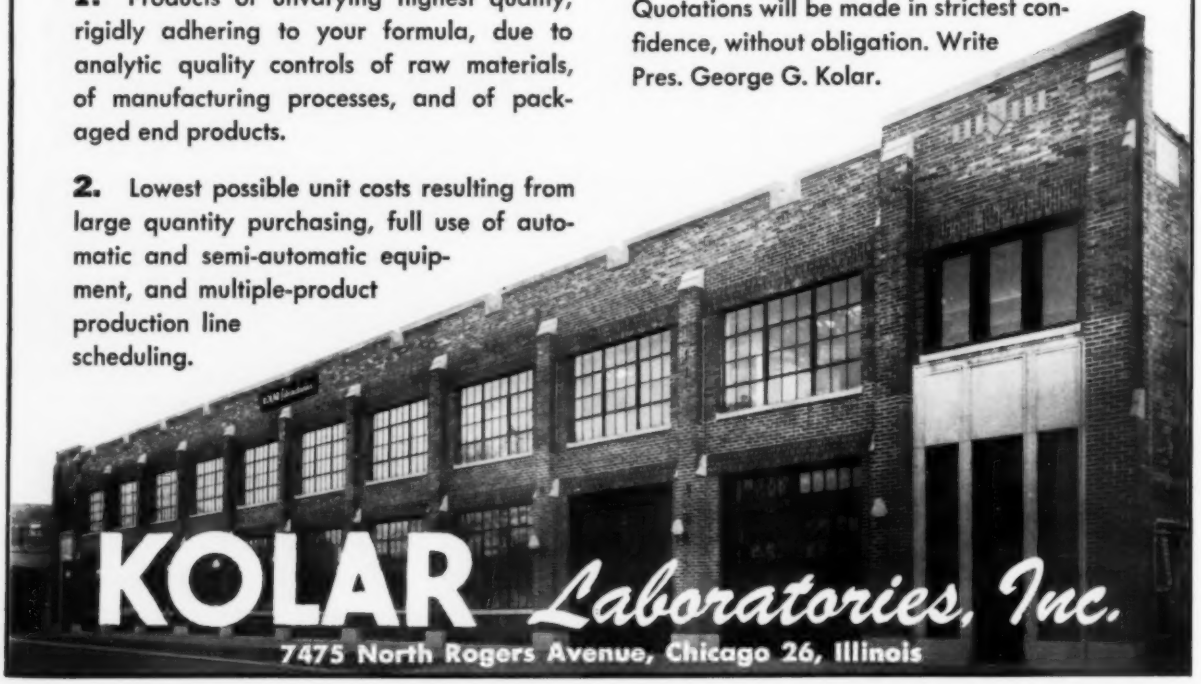
1. Products of unvarying highest quality, rigidly adhering to your formula, due to analytic quality controls of raw materials, of manufacturing processes, and of packaged end products.

2. Lowest possible unit costs resulting from large quantity purchasing, full use of automatic and semi-automatic equipment, and multiple-product production line scheduling.

3. Minimum shipping charges for materials and for product distribution because of our location at the population, manufacturing and transportation center of the country.

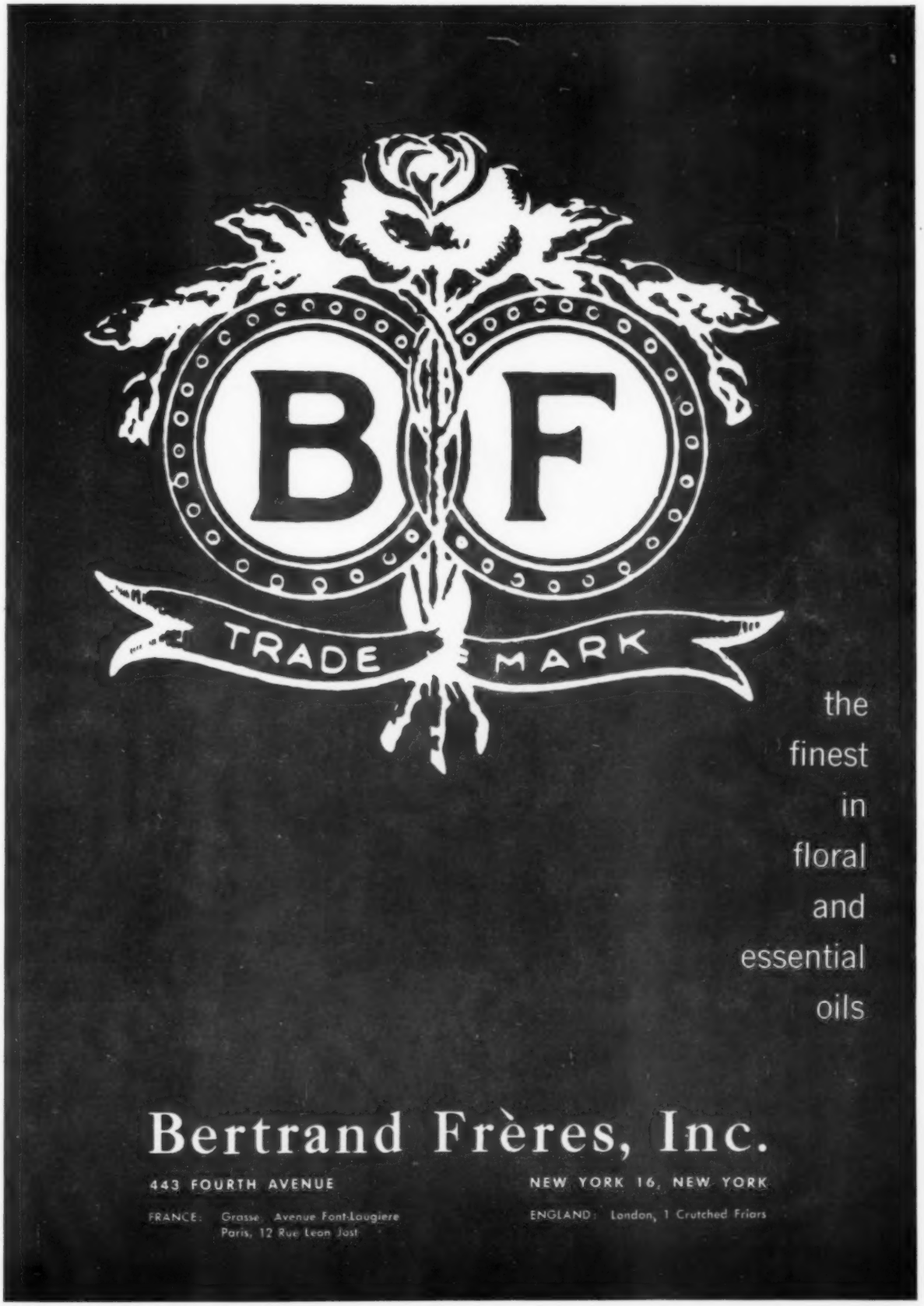
Compare Your Costs with Our Charges

Quotations will be made in strictest confidence, without obligation. Write Pres. George G. Kolar.



KOLAR *Laboratories, Inc.*

7475 North Rogers Avenue, Chicago 26, Illinois


B F
TRADE MARK
the
finest
in
floral
and
essential
oils
Bertrand Frères, Inc.
443 FOURTH AVENUE
NEW YORK 16, NEW YORK
FRANCE: Grasse, Avenue Font-Lougiere
Paris, 12 Rue Leon Jost
ENGLAND: London, 1 Crutched Friars

Aliphatic Aldehydes

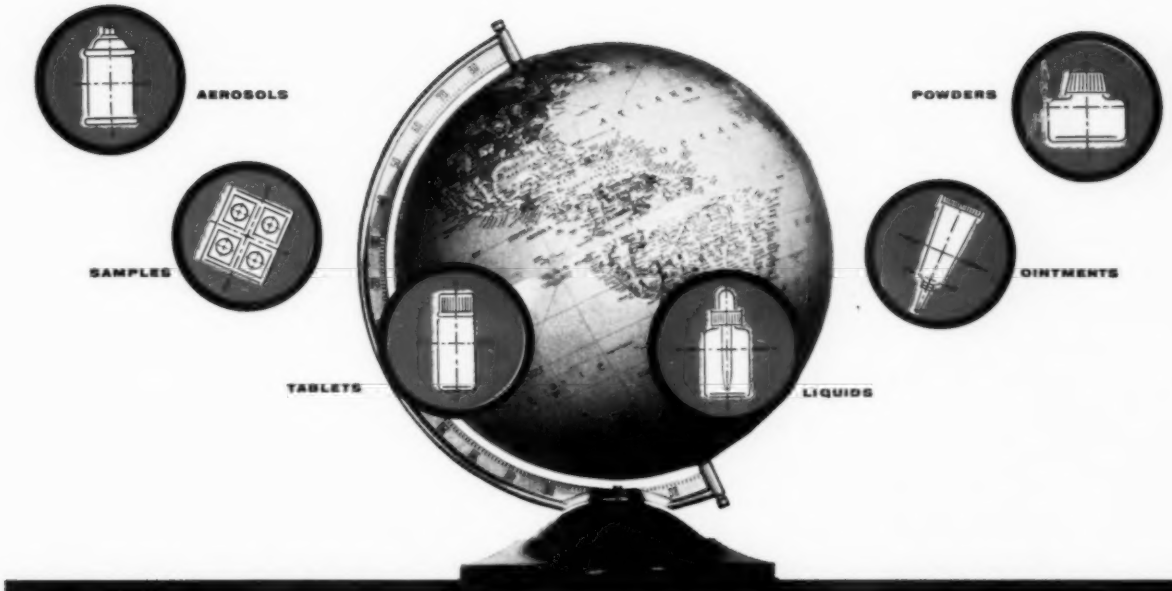
Aldehyde C 8 upto Aldehyde C 12
including C 11 undecylenic aldehyde
and C 12 methylnonylacetaldehyde

POLAK & SCHWARZ

Unexcelled quality

Ask for our pricelist for aromatic chemicals

Polak & Schwarz Inc., 667 Washington Street, New York - 14 (N.Y.)



STRONG COBB

has a world of background in the packaging field!

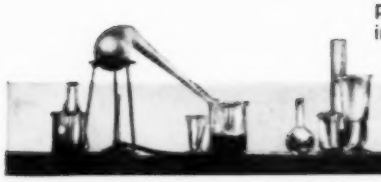
Proper packaging partakes of both art and science—it concerns both color and visibility. The container itself is designed for product-protection and shelf-life. Style, shape and size express the character of the product. Strong Cobb has a world of background experience in developing effective packaging. Let us help you in your packaging plans.

PACKAGES FOR: AEROSOLS ★ SAMPLES TABLETS ★ LIQUIDS ★ POWDERS ★ OINTMENTS

You are invited to inspect your product being produced and tested at Strong Cobb anytime during the period of its manufacture. No appointment is necessary... come in and tell us you want to see your order being filled. We invite you to discuss any idea or plan you have for the manufacture of any product. Our research, manufacturing, and packaging facilities are yours.

Cooperating in Packaging with

IVERS LEE CO.



"OUR CUSTOMERS HAVE CONFIDENCE IN OUR PERFORMANCE"

STRONG-COBB

Strong, Cobb & Company, Inc.

3654 LISBON ROAD, CLEVELAND 4, OHIO TELEPHONE: SWEETBRIAR 1-0800

In New York: 745 Fifth Avenue, New York 19, N. Y.
In Canada: Strong, Cobb of Canada, Ltd., 388 St. Paul Street, W., Montreal
American Chlorophyll Division, Lake Worth, Florida

PHARMACEUTICAL MANUFACTURERS TO THE TRADE - SINCE 1833

By Far . . .

the largest number of Perfume and Fragrance advertisers ever to use one magazine are now telling their story in BEAUTY FASHION. Read BEAUTY FASHION each issue for the fascinating story these perfume advertisements tell.

See in BEAUTY FASHION:

Angelique, Inc.
Parfums Anjou
Elizabeth Arden Sales Corp.
Blanchard, Inc.
Hattie Carnegie
Caron Corporation
Carven Parfums
Ceil Chapman Parfums
Chanel, Inc.
Parfums Charbert, Inc.
Charles of the Ritz (Directoire)
Mary Chess
Colonia, Inc.
Corday, Inc.
Coty, Inc.
Jean d'Albret
Dana, Inc.
Christian Dior
D'Orsay Sales Corp.
Parfums Evyan Co.
Faberge, Inc.
Guerlain, Inc.
Herb Farm Shop, Ltd.
Houbigant, Inc.
Lancome Sales, Inc.
Lanvin
Lucien Lelong
Lentheric, Inc.
Parfums Marcy, Inc.
Maromay, Inc.
Miahati, Inc.
F. Millot, Inc.
Germaine Monteil
Jean Nate, Inc.
Renoir
Nina Ricci
Rigaud
Roger & Gallet, Inc.
Scandia Cosmetics Corp.
Parfums Schiaparelli, Inc.
Shulton, Inc.
Tuvache, Inc.
Les Parfums Worth

BEAUTY FASHION THE MAGAZINE OF PERSONAL SELLING

101 West 31st Street, New York 1, N.Y.

Here's a new and distinctive perfume oil concentrate that adds high-fashion appeal to your popular-priced products. A delightful floral fragrance that's equally at home in perfumes, toilet waters, creams, powders and talcums. FLORDINE possesses all the necessary fixative properties to make it long-lasting in the finished products. Only 8.50 per pound.

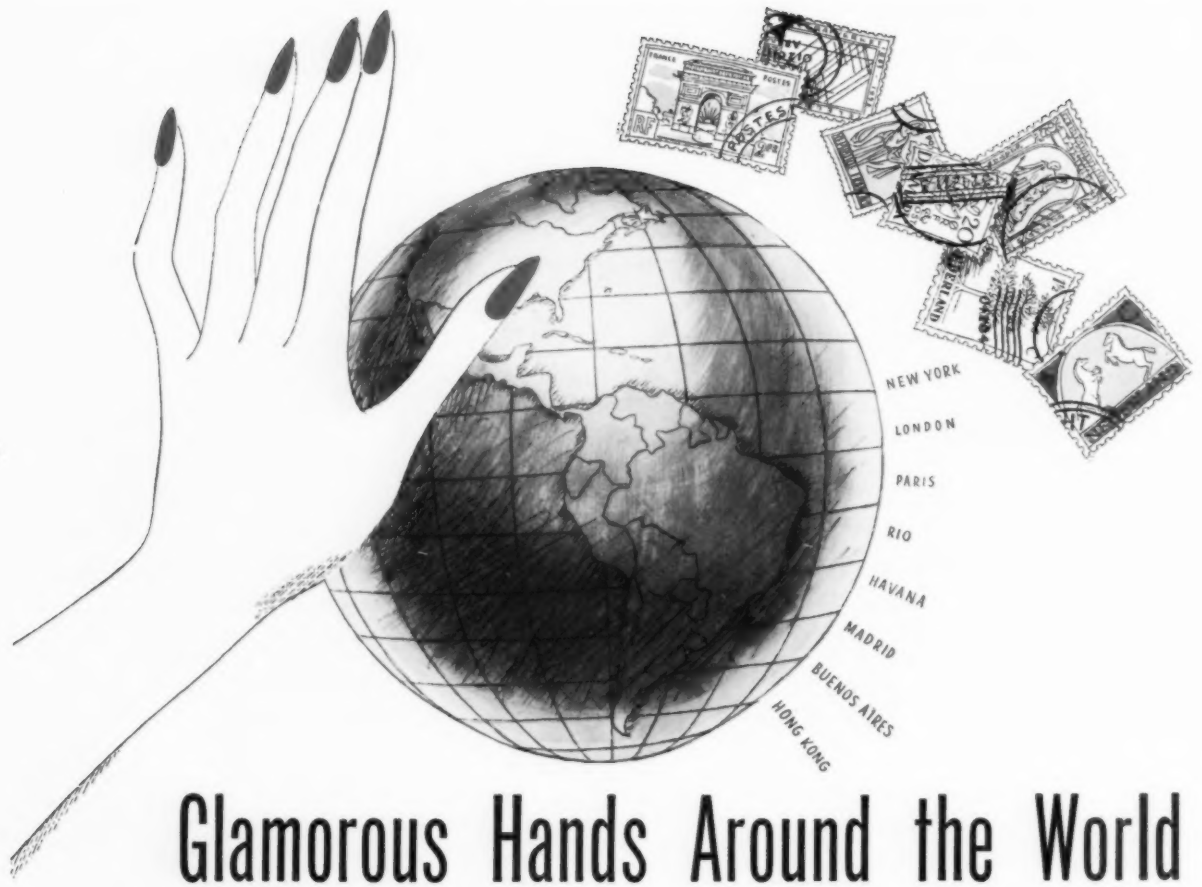
FLORDINE

AROMATIC PRODUCTS, Incorporated

15 E. 30TH ST., N.Y. 16 • CHICAGO • DALLAS • MEMPHIS • PITTSBURGH • LOS ANGELES • BOSTON

Specialists in the creation of perfume odors exclusively!

MEMBER: FRAGRANCE FOUNDATION



Glamorous Hands Around the World Call For the Foremost Name

DURLIN *for bulk nail enamel*

DURLIN is the Foremost Name in BULK NAIL ENAMEL catering to the leading class packagers the world over. Durlin is first in quality, first in fashion-right colors, first in technical and packaging service.

glamorous hands *around the world . . .*

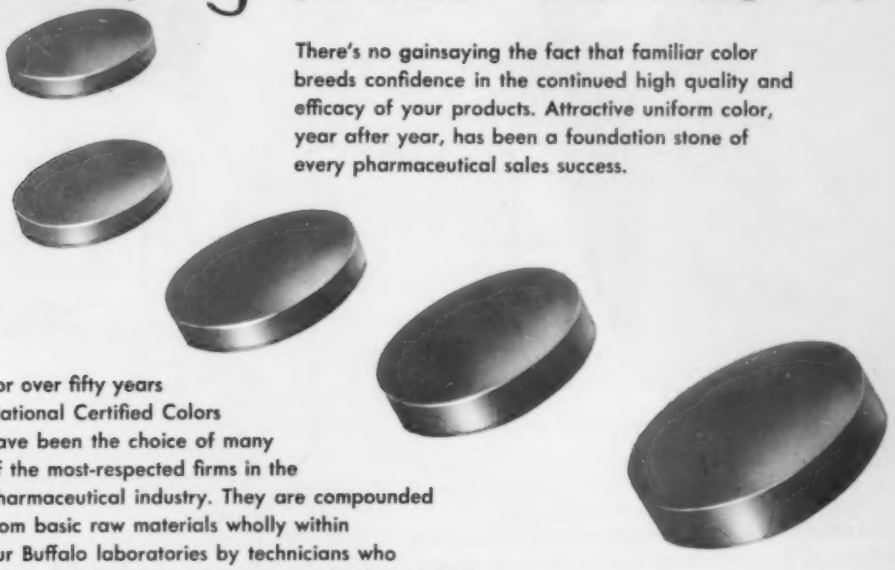
DURLIN CO.

744 Broad Street, Newark 2, N. J.

Cable Address: Durlin Newark Newjersey

IN PHARMACEUTICALS

Familiarity breeds confidence...



There's no gainsaying the fact that familiar color breeds confidence in the continued high quality and efficacy of your products. Attractive uniform color, year after year, has been a foundation stone of every pharmaceutical sales success.

For over fifty years
National Certified Colors
have been the choice of many
of the most-respected firms in the
pharmaceutical industry. They are compounded
from basic raw materials wholly within
our Buffalo laboratories by technicians who
know and respect the pharmaceutical industry's high
standards of manufacture. They are noted for uniformity
of shade, pure-dye strength and chemical composition.

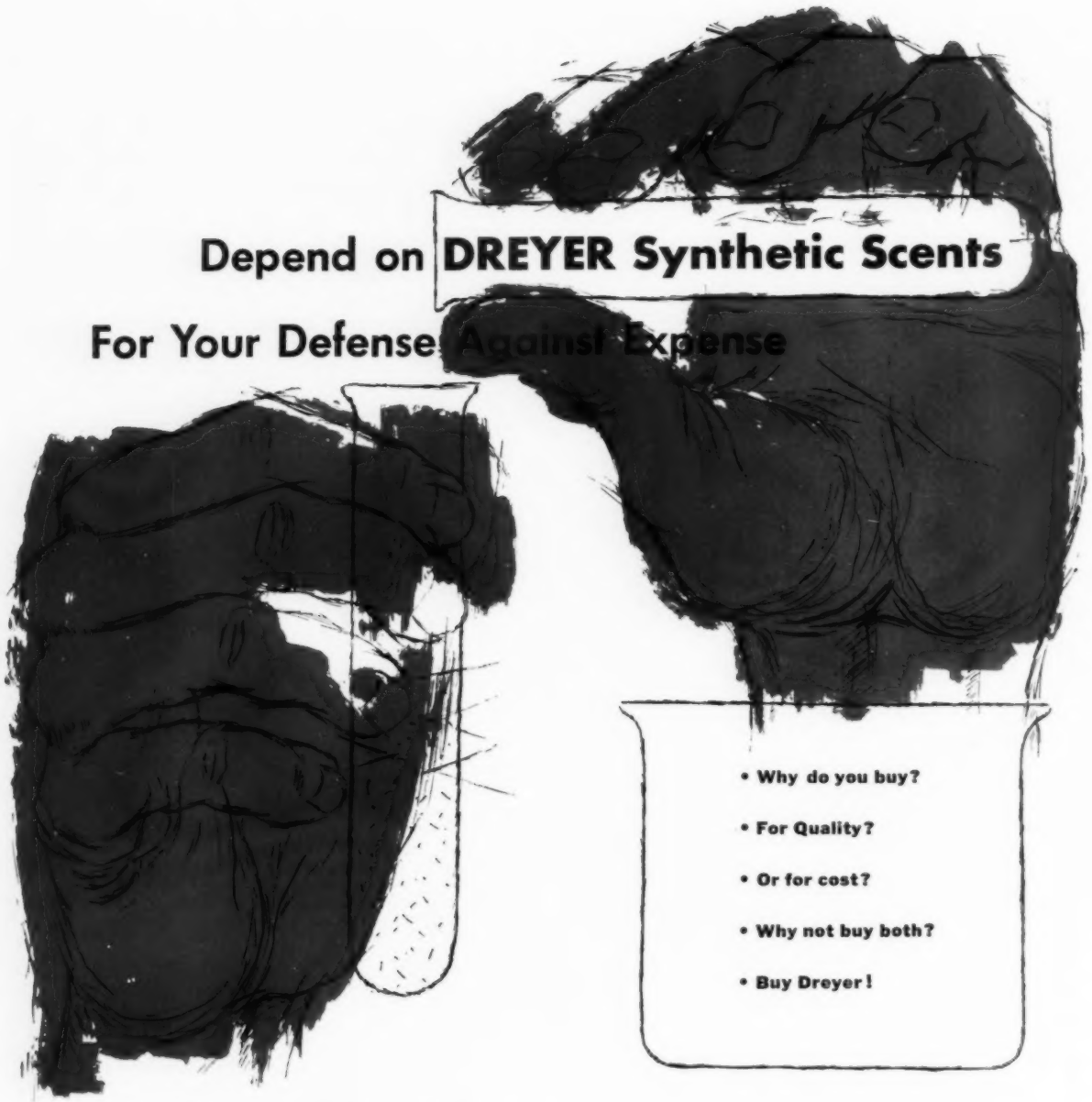
We will be pleased to extend technical help
on formulation and use of certified colors.

®NATIONAL CERTIFIED COLORS

CERTIFIED COLOR DIVISION
NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Depend on DREYER Synthetic Scents

For Your Defense Against Expense



You get distinguished *re-creations* of natural flower odors and bouquets in all Dreyer Synthetic Floral Creations and Perfume Concentrates.

You get them at prices that pay.

Send your letterhead for free samples.

P. R. Dreyer, Inc.
601 West 26th Street, New York 1, N. Y.

DEPEND ON

DREYER **FOR**

- **Flavors**
- **Essential Oils**
- **Aromatic Chemicals**

"Or as I like to say, doctor, we only make a mill on a pill."

Keeping Posted

Medical Advertising Code of Ethics

A ten-point code of ethics governing the preparation of medical advertising and sales promotional material was adopted unanimously by the board of directors of the Pharmaceutical Advertising Club of New York and the Midwest Pharmaceutical Club at a joint meeting held in Atlantic City, June 7, during the AMA meeting. The code, presented by G. L. Long, advertising manager of Mead Johnson & Company, recognizes that ethics in pharmaceutical advertising are based on conscience, faith, trust, and integrity.

In telling a joint luncheon of the clubs that the physician is relying upon the pharmaceutical manufacturer more than ever before for his continuing education, and that this places a grave responsibility upon the industry, Dr. Harry Gold set the stage for the introduction of the new code. The code encompasses the following points:

1. Pharmaceutical advertising should not, by intent or inference, defraud, deceive or mislead the reader. Any statement of fact should be accurate and supportable by adequate acceptable scientific evidence. Any statement of rationalization or speculation should not be presented as a fact—stated or implied.

2. Any statement made in pharmaceutical advertising should be believable and provable. Adequate and objective evidence should be unquestionable. Advertising should not exceed claims which are supportable by such evidence.

3. A pharmaceutical advertising program should give a proper perspective of a product's role in patient management, such as: properties, indications, limitation of use, advantages and disadvantages.

4. Quotation or excerpts, abstracts or paraphrasing from published medical papers or texts, personal communications, scientific exhibits or speeches shall not by themselves change or distort the true meaning intended by the authors. Such material shall not be used if it is not consistent with later known findings, observations or conclusions of the authors or investigators. Such material shall not be cited as representing general medical opinion if it reflects a point of view held only by an individual worker or group.

5. Comparisons with competitive pharmaceutical specialties, aimed at establishing product superiority, are fair and proper if: such comparisons are supported by acceptable evidence; such comparisons are constructive and on a sound medical basis; such comparisons do not refer disparagingly to the safety of the competitive product.

6. A trademark is private property, and it can be used legally only with the consent of the owner of the mark.

7. The medical profession should be given information on the clinical use of a new drug, or a new use for an established drug, before the release of such information to the lay public.

8. Prescription drugs should not be advertised to the lay public.

9. Statements by a physician should not be used in advertising to the lay public.

10. Physicians, or actors purporting to be physicians, may appear in institutional advertising to the lay public, but not in product advertising to the lay public.

Cosmetic Makers Prefer Newspapers

Newspapers reaped the largest share of the perfume and cosmetic manufacturers' advertising expenditures last year. The $16,095,000 spent by this branch of the industry in newspaper advertising in 1954 represented a 4.3 per cent gain over 1953, and established a record for perfumes and cosmetics since expenditure tabulations were first published in 1938. Among the big investors in newspaper advertising last year was Revlon Products Corporation which increased its newspaper budget by 420 per cent in 1954, spending a total of $1,589,450, and making extensive use of r.o.p. newspaper color. This expenditure landed Revlon in 54th position among the 100 largest users of newspaper advertising in 1954.

Others doing business in this industry who were among the first 100 buyers of newspaper advertising in 1954 were: Colgate-Palmolive Company, in fourth position with an expenditure of $10,990,682, which was 9.1 per cent below the expenditure for 1953; Procter & Gamble Company, seventh, $7,251,400, 9.3 per cent below 1953; Lever Brothers Company, eighth, $6,803,797, 36.2 per

DOW

profitable new sales appeal with

DOW AROMATICS!

Odors can be added . . . reduced . . . or replaced with Dow aromatics to give you better products, better profits, better working environment for employees

The customer's choice between your product and a competitor's may depend on its odor appeal at the point of sale. To assure customer preference, take advantage of the help Dow can give you in adding, reducing or replacing odors with Dow odor correction agents.

Paints, plastics, ink, adhesives and countless other naturally odorous materials can easily be made odorless or delightfully scented with floral, fruity or original fragrances at very little cost. It's worth investigating.

The people who make your products and the communities in which they are made will benefit, too, from your use of Dow aromatics. Dow odor control techniques can do much to improve employee and community relations by eliminating undesirable manufacturing odors.

Tell us the details about the odor problems involved in the making of your product. We'll be glad to help find the answer most profitable to you. Write to THE DOW CHEMICAL COMPANY, Midland, Michigan, AR 353B.

you can depend on DOW CHEMICALS

DOW

cent below 1953; Monsanto Chemical Company, twelvth, $4,101,841, 142.6 per cent above 1953; Sterling Drug, twenty-first, $2,822,348, 5.8 per cent below 1953; Gillette Company, thirty-second, $2,296,936, 9.9 per cent below 1953; Consolidated Cosmetics, forty-seventh, $1,707,173, up 50.9 per cent from 1953; International Cellucotton Products Co., fifty-first, $1,635,247, 13 per cent below 1953; American Home Products Corporation, fifty-fifth, $1,587,823, 44.1 per cent above 1953; Andrew Jergens Company, eighty-first, $1,140,117, 48.3 per cent below 1953; Mennen Company, eighty-fifth, $1,095,313, 162.6 per cent above 1953; Bristol-Myers Company, one-hundredth, $922,532, 58.2 per cent below 1953.

Aerosol Products Up 33 Per Cent

Aerosol units produced in 1954 by American and Canadian producers totaled 185,000,000, and were valued at $190,000,000, representing a 33 per cent increase over 1953. More than 85 different types of products were manufactured in self-spraying, pint-sized aerosol containers, including everything from household aids and personal toiletry articles to industrial and pharmaceutical products. Aerosol shave lather was produced to a total of 42,294,628 units, representing a 33 per cent increase over 1953 production of 32,000,000 units. Total of medicinals and pharmaceuticals, including athlete's foot sprays, burn preparations, and similar products, was 1,132,405 units, compared with 831,301 in 1953. Production of cosmetic products, including shampoos, perfumes, personal deodorants, suntan oil, hand lotion, and hair lacquer in both metal and glass containers totaled 40,379,123, compared with 1953 figures of 15,120,132 for hair lacquers, and 3,779,878 for other types of personal products.

The fluorine propellants which make the aerosol products possible are also experiencing an expansion. Both du Pont, maker of Freon propellants, and General Chemical Division of Allied Chemical & Dye Corporation, maker of Genetrons, have added types which now meet almost any requirement in aerosol packaging and dispensing. During the 12-month period ending with February, General Chemical doubled capacity at Baton Rouge for Genetrons 11 and 12. These propellants, dichlorodifluoromethane and trichloromonofluoromethane, and 11 and 12 mixes, are said to meet the bulk of aerosol requirements.

Fail to Strengthen Michigan Fair Trade

An attempt to strengthen the Michigan Fair Trade Act so as to circumvent the court ruling of 1952 which invalidated the non-signer clause of that law, failed when the House of Representatives State Affairs Committee refused to report the bill despite violent pleas at a recent public hearing on the measure. The bill would have required manufacturers to register brand name products and the retail prices they wanted charged for them with the state revenue department, unless they did not care at what prices their products sold; outlawed below-cost selling by establishing a six per cent markup over invoice prices by retailers, and two per cent by wholesalers; prohibited a person from representing himself to a manufacturer as a wholesaler and then selling at retail. The third provision was designed to establish control over discount houses.

Dow to Produce Glycerine

The Dow Chemical Company expects its new synthetic glycerine plant at its Texas division in Velasco, to be "on stream" late this Summer. Using a process developed by Dow, the plant has a rated capacity of 36 million pounds per year. Dow's entry into the synthetic glycerine field brings into production only the second unit in the world producing on a commercial scale. Construction started about a year ago. Dow's glycerine is expected to be used in four major fields: alkyd resins for enamels, homectant for tobacco products, dynamite explosives, as plasticizer in making cellophane, adhesives, and paper.

Warner-Lambert Facts

From the prospectus issued in connection with the sale of 325,000 shares of common stock of Warner-Lambert Pharmaceutical Company we learn that 60 per cent of the domestic net sales of the company are of pharmaceutical and related products. These consist mainly of 22.7 per cent ethical pharmaceutical specialties, and 36.2 per cent proprietary products and drug sundries. Domestic sales of toiletries and cosmetics total 27 per cent, plastic products 10 per cent, and export 4.1 per cent.

Profit margins on ethical and proprietary drugs and drug sundries as well as on export sales were substantially greater than those on toiletries and cosmetics and plastic products. Therefore, in 1954, over 83 per cent of the operating profits from domestic operations were derived from ethical and proprietary drugs, drugs sundries, and export items.

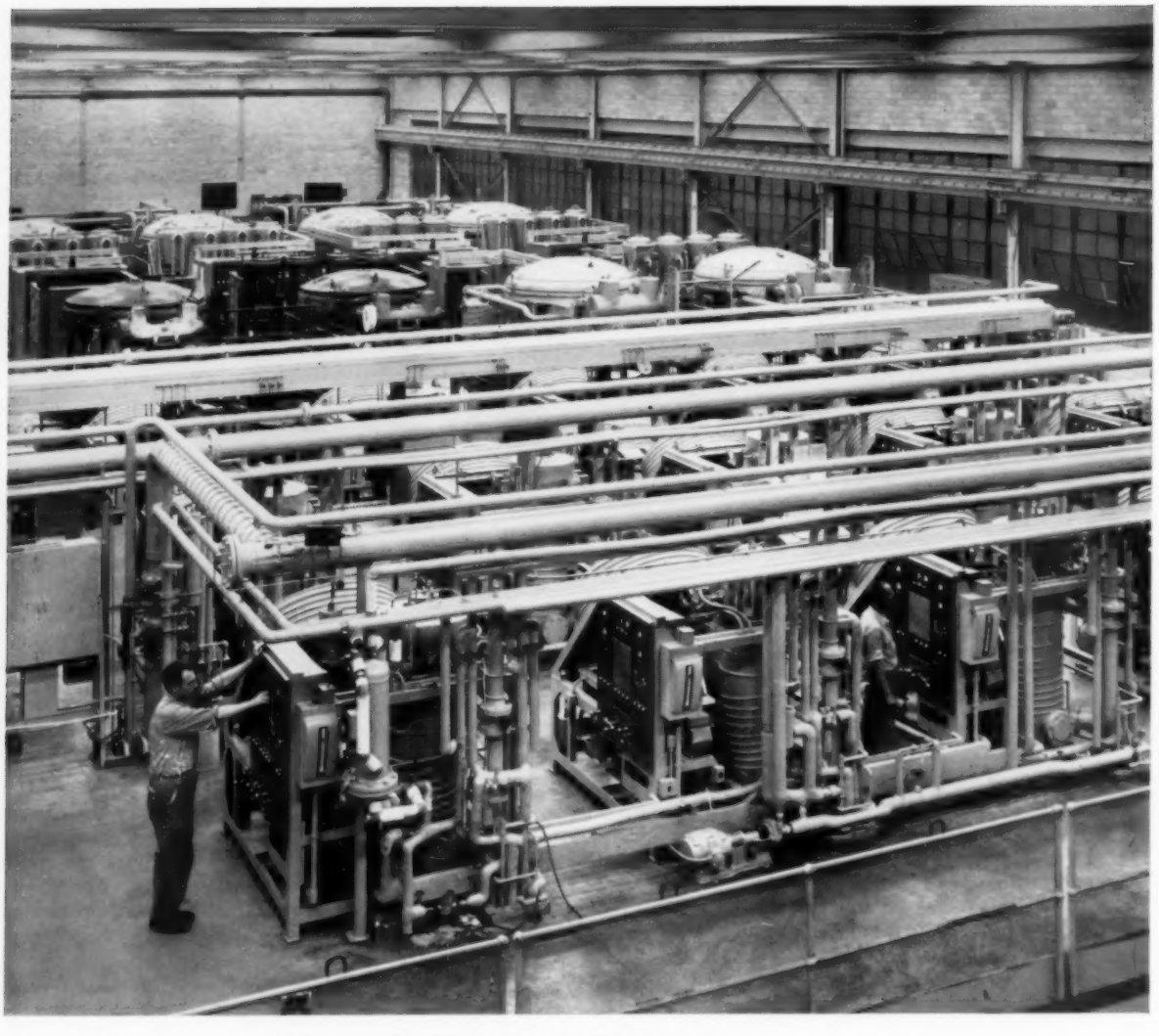
Profits for the first three months of this year totaled $7,818,000, compared with earnings for the full year of 1954 of $30,018,000, for 1953 a total of $27,344,000, and in 1952, $25,978,000. Research expenditures for 1954 totaled $1,694,000, compared with $1,478,000 in 1953, and $1,428,000 in 1952.

Listerine Antiseptic is produced and sold under a royalty agreement to others, the agreement having no termination date. In 1954, royalties paid under this agreement totaled $830,000. Royalties paid on other products totaled $290,000, making a total of royalties paid in 1954 of $1,120,000.

As of April 1, the company employed approximately 3,750 persons in the United States, and approximately 3,200 in foreign countries by the company's foreign subsidiaries.

Habit-Forming Warning

The Food and Drug Administration commenced hearings last June 7 on proposal of discontinuing the requirement that Acetylcarbromal and Bromural must carry in their labeling the statement: "Warning. May be habit-forming." Although no difficulty was anticipated, Dr. Nathan B. Eddy, an expert from the National Institutes of Health, testified, and first said in



What makes DPi **vitamin E** unique

When a chemist synthesizes vitamin E from simpler compounds, he gets equal numbers of several alternative spatial configurations of the molecule. The result is called *dl*-tocopherol. But nature makes all her tocopherol with a single spatial configuration, namely *d*-tocopherol. Our unique molecular distillation process gives us our tocopherol from vegetable sources, where it's all *d*. Many pharmaceutical houses see no economic or technical reason to include isomers in their vitamin E products that do not appear in living tissues.

Data and quotations on DPi tocopherol and its esters from ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York, Chicago, and Memphis • W. M. Gillies and Company, Los Angeles, Portland, and San Francisco • Charles Albert Smith Limited, Montreal and Toronto.

leaders in research and production of vitamin E

DPi

Also . . . vitamin A . . . distilled monoglycerides . . . some 3500 Eastman Organic Chemicals for science and industry

Distillation Products Industries *is a division of* **Eastman Kodak Company**

substance, that all analgesics and sedatives "may be habit-forming." Under questioning he stated that all sedatives that are effective are "very definitely habit-forming," and he stuck to his statement that analgesics "probably are habit-forming." After this startling testimony was given, further hearings were postponed until September 13. This will give manufacturers and distributors of analgesics and sedatives time to ponder over this subject so that they will be ready to testify when the hearings are resumed in the Fall.

New Mexican Steroid Plant

A new plant for the manufacture of steroid hormones and intermediates was formally opened last month in Mexico City, marking the entry of Productos Esteroides S.A., and its Puerto Rican parent company, Root Chemicals, Inc., into the steroid hormone field. One of the organizers and stockholders in this new venture is Dr. I. V. Sollins, formerly associated with the Syntex organization. Dr. Sollins sold his interest in Syntex and resigned as president of its American sales unit at the end of last year. Root chemicals is starting up its plant at Rio Piedras, Puerto Rico in early July. The combined production capacity of the Mexican and Puerto Rican facilities will be equivalent to between one and two tons of hormones monthly. Sales in the United States and export markets are to be handled by the newly organized Ivy Chemicals, Inc., 285 Madison Avenue, New York, under the direction of Dr. Sollins. Heading up the Mexican plant is Dr. Arthur D. Odell, formerly production chief for Frosst Laboratories in Canada and Syntex, S.A., in Mexico. The Puerto Rican plant is under the direction of Dr. Hector Flores Gallardo, formerly of Monsanto Chemical Company.

Pharmacists and Drugs

Retail pharmacists should explain more about the medical prescriptions they sell, according to John A. McCartney, trade relations manager of Parke, Davis & Company. "No one buys medicines because of their attractiveness, or any of the other normal marketing criteria," he said, "you are actually selling recovery and a return to health. It is your responsibility to explain the service you are performing, including such delicate matters as price."

Glycerine Research Awards for 1955

The Glycerine Producers Association is now accepting nominations for the fourth annual Glycerine Research Awards. The first award is $1,000 and an honor plaque, the second award is $300 and an honor certificate, and the third award is $200 and an honor certificate. Research bearing on the chemical, physical, or physiological properties of glycerine, or of the properties of glycerine-derived or glycerine-containing materials is eligible. Work exhibiting originality in extending glycerine's usefulness in new applications will merit special consideration.

Previous award winners have been honored for accomplishments in the preservation of blood cells with glycerine at low temperatures, synthesis of derivatives of glycerine found in animal cells, and basic studies on the structure of glycerine derivatives. Nominations must be made on official entry blanks and must be received by November 1. Entry blanks and complete details are available from the Association at 295 Madison Avenue, New York 17.

SKF Substitution in Detroit

Smith, Kline & French Laboratories filed law suits against the owners of six Detroit pharmacies charging them with substitution in filling prescriptions, and seeking injunctions against "the further continuing" of these substitution practices, and asking for $5,000 in punitive damages in each case. In the cases, which were filed in the U. S. District Court for the Eastern District of Michigan, the defendants were accused of filling with another manufacturer's product prescriptions specifically calling for an SKF product by brand name. Carl K. Raiser, manager of trade relations at SKF, said that the suits were brought as a result of "a recent survey of prescription filling practices in the Detroit area," adding that the Detroit survey was part of a "continuing nationwide program to eliminate substitution" in the retail drug business.

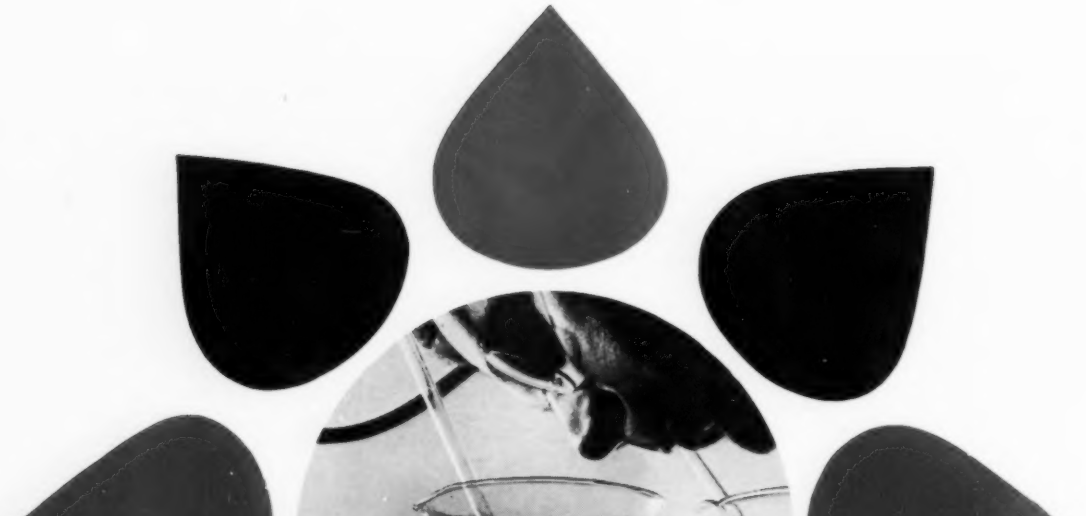
Life Expectancy of 100?

Life expectancy is much closer to 100 than most people realize, according to Graydon L. Walker, vice-president of Parke, Davis & Company. Discussing The Mountains on Our Horizon, before the Ontario Retail Druggists Association, he said that cardio-vascular diseases are the "most formidable mountain," but that "from the vast amount of information being accumulated, there seems to be some justification for a belief that this mountain will be scaled like the Mt. Everest it represents on the graph of mortality statistics."

Salk Vaccine Favored

A group of scientists, in a poll taken before the House Interstate and Foreign Commerce Committee last month, split eight to three in favor of continuation of the mass inoculation of children this Summer with the Salk polio vaccine. While eight scientists favored continuing inoculations during the Summer, and three opposed it and urged further research, two other scientists demanded a halt in the manufacture of the vaccine on the grounds that safety of vaccine was technically uncertain. The group urged an immediate research undertaking to find equally effective but less virulent strains of virus to substitute for those now used in the vaccine. Dr. Salk did not vote, but expressed confidence in the vaccine. However, he favored the search for a less virulent strain of virus.

Dr. Leonard A. Scheele, Surgeon General of the U. S. Public Health Service, reaffirmed his endorsement of continued manufacture of the vaccine as well as of its safety. Basil O'Connor, president of the National Foundation for Infantile Paralysis, urged a speedup in the vaccine program and an end to the controversy. Mr. O'Connor also lashed out at critics of the safety of the vaccine, particularly at Dr. Albert S. Sabin, of the University of Cincinnati, who has long been favoring a live vaccine.



Fragrances developed by *Synfleur* out of the wealth of its 65 years of experience delve into the heart of your perfuming problems.

Creative, artistic, efficient and economical, original *Synfleur* compositions and perfume specialties are available or can be developed by our skilled chemists to meet your every fragrance requirement.

New product or old, these many decades of inventive skill and rewarding experience are your best assurance that with *Synfleur* your fragrance needs will be fully satisfied.

Synfleur SCIENTIFIC LABORATORIES, INC.

MONTICELLO, N. Y.

Founded 1889 by Alois Von Isakovics

ATLANTA • DETROIT • NEW YORK • HAVANA • RIO DE JANEIRO • MEXICO, D. F.
Chicago • Melbourne • Burma • Hong Kong • Bogota • San Jose
Ciudad Trujillo • Guayaquil • Guatemala City • Calcutta • Wellington
Managua • Panama • Asuncion • Manila • San Salvador • Montevideo
CANADA: Herman & Leal • 637 Craig Street West • Montreal, Quebec

N. I. H. Biologics Control Changed

The difficulties experienced in bringing the Salk poliomyelitis vaccine to the market has resulted in a reorganization within the National Institutes of Health to provide for an expanded program of biologics control. The reorganization was announced by Surgeon General Leonard A. Scheele of the U. S. Public Service last month and put into effect coincident with the filing detailed scientific report to President Eisenhower by Dr. Scheele blaming the breakdown in the mass polio inoculation program on the failure of the methods for producing the vaccine on a mass basis to match the experience of the more limited production in the field tests of last year. The report stressed that events concerning the Salk vaccine, which in the traditional course of scientific development would have covered years, were telescoped into months, with the result that both successes and failures were magnified. The report also outlined plans for the future handling of biologics.
In the NIH reorganization, a new Division of Biologics Standards is established as a separate organizational entity, responsible directly to the director of NIH. Previously, the biologics control program operated as a constituent laboratory of the National Microbiological Institute. The reorganization results in an augmented professional staff for the new division, expansion in the amount of testing, and planned surveillance conducted by the NIH, expansion of research related to the development and control of biologics, and strengthening of supporting services such as administration, record management, and statistics.
The creation of the new Division of Biologics Standards, Surgeon-General Scheele explains, is necessary, among other things, in order to deal with increasingly complex problems in the biologics field among the virus vaccines.

Nation's Physicians Up

New physicians added to the population of this country during 1954 totaled 7,917. Subtracting the 3,667 physician deaths during 1954, there was on January 1, 1955, an increase of 4,250 physicians in practice to bring the total to a new record high. The increase of 4,250 for 1954 was 641 above the figure for 1953. Actually, there was issued during 1954 a total of 15,029 licenses to practice, but this number includes duplications of candidates examined in more than one state.
The largest number of new license holders came from California with 1,975. New York was second with 1,498, followed by Illinois, Ohio, Pennsylvania, and Texas with over 500 each; Delaware, Idaho, Nevada, North and South Dakota, and Vermont with less than 50 each. Smallest was Wyoming with 24.
The addition of physicians to the population on the basis of geographical areas was listed in the following, beginning with the largest number:
Middle Atlantic States, 1,680 (New York, New Jersey, Pennsylvania); East North Central, 1607 (Ohio, Indiana, Illinois, Michigan, Wisconsin); South Atlantic, 1,074 (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida); West North Central, 892 (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas); Pacific, 759 (Washington, Oregon, California); West South Central, 711 (Arkansas, Louisiana, Oklahoma, Texas); New England, 489 (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut); East South Central, 477 (Kentucky, Tennessee, Alabama, Mississippi); Mountain, 171 (Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada); Territories and possessions, 57 (Canal Zone, Guam, Hawaii, and Puerto Rico).

FTC to Study Antibiotic Industry

The Federal Trade Commission has announced that it will make a "priority" study of the manufacture and sale of antibiotics, especially from the standpoint of pricing. FTC Chairman Edward F. Howrey said that the inquiry is not intended to uncover possible law violations, but would be the first "impartial economic survey" ever made of the industry.
"The products of this relatively new industry directly affect the lives and well-being of all of our people," said Commissioner Howrey," and yet, very little authorative information has been made public. The Commission would be interested in knowing more about the industry's price mechanisms and the seemingly wide disparities in price that appear to exist as between certain items."
This is a surprising thing. Never before has there been any investigation of the drug business, and we fail to understand why the Commission should pick out one particular part of the drug business for investigation.

T. G. A. Names Counsel

The Toilet Goods Association has named Hamel, Park & Saunders, Washington, D.C. as general counsel of the Association succeeding the late Hugo Mock. Fuller Holloway, a partner in the firm will be the active attorney for the Association.

Mck. & R. Can Fair Trade Products

McKesson & Robbins are within their rights in making fair trade contracts on goods of their own manufacture, even though the firm operates both as a manufacturer and a wholesaler, according to a decision by Judge John W. Clancy of the U. S. District Court for the Southern District of New York. Widely regarded as a test case, this was the first time that the question has been raised whether a firm operating as both a manufacturer and a wholesaler could make fair trade contracts with independent wholesalers for the sale of its branded products within the meaning of the Miller-Tydings Amendment and the McGuire Act.
Judge Clancy concurred in an earlier decision rendered by Federal Judge Thomas F. Murphy in an application by the Government on a motion for summary judgment against McKesson & Robbins. The Court accepted Judge Murphy's conclusion that it was not necessarily illegal under the antitrust laws for a manufacturer who is also a wholesaler, to fair trade its products. Judge Murphy held that the Government, to prove illegality, would have to show some additional effect over and beyond that contemplated in every fair trade contract. Judge Clancy held that the Government made no such

showing and that the Government's complaint against McKesson & Robbins should therefore be dismissed. The ruling is similar to that handed down in favor of the Eastman Kodak Company earlier this year. In that case it was held that Eastman was within its legal rights in making fair trade contracts with independent retailers operating at the same distribution level as Eastman owned retail outlets.

Fair Trade Bureau Opposes Bill

The Capehart bill to amend the McGuire Act, is opposed by the Bureau of Education on Fair Trade. This is the bill which would declare it to be an unfair method of competition for manufacturers or distributors of commodities subject to fair trade contracts to willfully and knowingly sell or deliver such commodities to persons selling them at less than prices prescribed in the contracts, or to persons selling the commodities to others who so sell. The bill is being backed by the American Fair Trade Council.

The Bureau of Education on Fair Trade finds two major objections to the bill:

1. The bill would expose all fair-trading manufacturers, including those acting in good faith, to such intolerable hazards as to raise serious question as to the advisability of fair-trading.
2. Retailers already have ample remedy against manufacturers who fair trade in bad faith, because retailers now

a. Are not bound, as courts have held, by fair trade contracts made with manufacturers who have demonstrably failed to enforce such contracts in good faith.
b. Can exercise their right to buy, or not to buy, the goods of any manufacturer.

Pertinent A. Ph. A. Resolutions

The American Pharmaceutical Association at its recent convention adopted many resolutions. Some of those of particular interest are:

Resolved that the American Pharmaceutical Association take steps to amend or modify the provisions of the Durham-Humphrey Amendment to the Federal Food, Drug, and Cosmetic Act in order to permit chronically ill patients, so certified by their physicians, to receive medication without undue delay and hardships and without the necessity of a new prescription or without the requirement that the pharmacist obtain permission from the prescriber.

Resolved that the American Pharmaceutical Association appoint a special committee to evaluate the effects of the Durham-Humphrey Act on the pharmaceutical profession and that the committee make its findings and recommendations available for action by the Council upon conclusion of its studies.

Resolved that the American Pharmaceutical Association, as such, believes in and encourages the use of generic names for general drug products.

Resolved that the American Pharmaceutical Association condemn as unethical the dispensing of a pharmaceutical preparation or brand thereof other than that ordered or prescribed, unless such act is specifically authorized by the prescriber.

Whereas the Proprietary Association is using every effort to obtain general legislative acceptance of its definition for the term "patent or proprietary medicines" or similar terms, and

Whereas this definition includes all drugs which are completely packaged, meet Federal requirements, and are advertised for sale to the public under a trademark, trade name, or other trade symbol, and

Whereas it is the intent that such products may be sold legally in any outlet, and

Whereas acceptance of such a definition by legislatures will result in limiting only legend drugs to sale in pharmacies, and

Whereas such acceptance provides no protection to the public in the distribution of USP and NF drugs or products, be it

Resolved that the American Pharmaceutical Association oppose such legislation in the interest of public health, and be it further

Resolved that this resolution be referred to the Council with the recommendation that the proposed definition for proprietary medicine is completely unsatisfactory because it does not take into consideration the public health and welfare needs in the distribution of drugs, nor does it consider the fact that the mere advertising of drugs does not make them safe for unrestricted distribution to and for use by the public.

Hair Claims Stopped

Under an initial decision by a Federal Trade Commission hearing examiner, Merit Pharmacal Co., Chicago, would be prohibited from making false claims on the effectiveness of X-Tron hair preparations. The order would prohibit claims that X-Tron will: 1. permanently eliminate dandruff, itching or irritation of the scalp; 2. stop excessive hair fall; 3. have any effect in preventing or overcoming baldness; or 4. induce the growth of new hair.

Collapsible Tubes at Record

Collapsible tubes are being produced at the rate of a billion a year, highest in the industry's history, according to Lewis B. Platt, executive secretary of the Collapsible Tube Manufacturers Council. Shipments of the 16 manufacturers for the first four months of 1955 totaled 337,360,320 units, compared with 325,910,160 for the first four months of 1954. Collapsible tubes for shaving creams continued to gain, totaling 19,632,528 units for the period, a gain of 14½ per cent over 17,155,296 for the 1954 period. Medicinals and pharmaceuticals were up 5.1 per cent, from 64,476,432 to 67,744,576 units, while dentifrices climbed 4.8 per cent from 155,865,168 units to 163,329,120 units. Tubes for cosmetics advanced about two per cent, from 31,421,952 to 31,754,448 units. Those for household and industrial items were down two per cent, from 56,762,064 to 55,499,040 units.

Of total shipments, tubes for dentifrices account for 48.41 per cent; medicinals and pharmaceuticals 19.79 per cent; household and industrials 16.45 per cent; cosmetics 9.41 per cent; shaving creams 5.82 per cent; food 0.12 per cent.

ATLAS chem-memos

SORBITOL, MANNITOL AND RELATED POLYOLS • EMULSIFIERS, SOLUBILIZERS

Making oil hold 18 times its own weight of water

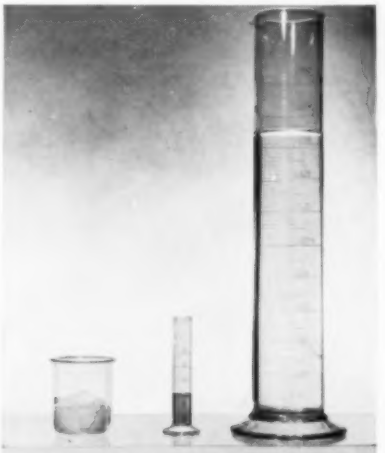
As an emulsifying agent for water-in-oil dispersion, Arlacel® C shows exceptionally high efficiency. For this reason, it is extensively used in a variety of W/O preparations in both the cosmetic and pharmaceutical fields . . . in such products as ointment bases, cream hair dressings, baby oils, cold creams, emollient creams and the like.

Arlacel C is sorbitan sesquioleate. Its long 18-carbon oleic acid chain gives it high affinity for and high solubility in oils. On the Atlas HLB scale, which is a measure of its hydrophile-lipophile balance, Arlacel C has a value of 3.7.

The test pictured here shows the tremendous water-holding ability of Arlacel C. 90 grams of petrolatum are mixed with 10 cc. of Arlacel C. Into this mixture you can disperse as much as 1660 cc. of water . . . about 18 times the weight of the oil phase constituent! As more and more water is gradually mixed into the emulsion, the resulting product becomes increasingly more viscous. The oil phase is external and holds the water *within* it. Addition of water, however, can't go on indefinitely, and when too much is added, the emulsion breaks.

While few formulators need such high ratios of water to oil, the test demonstrates the excellent emulsifying properties of Arlacel C. Also included in the Atlas line of emulsifiers are numerous other oil-soluble and water-soluble types, with various HLB values, and in a range of chemical types to suit practically any emulsion problem.

For a listing of most popular types of Atlas emulsifiers and data on their use, write for a copy of the booklet, "A Guide to Cosmetic and Pharmaceutical Formulation with Atlas Products."



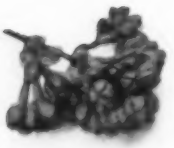
90 grams of petrolatum (in beaker) plus 10 cc. of Arlacel C (in small graduate) can hold 1660 cc. of water (in large graduate) . . . forming a thick, creamy W/O emulsion.

Forward-looking formulators use ATLAS products

. . . like the Wildroot Co., Inc., Buffalo, N. Y., whose Wildroot Cream Oil has become a leading brand of hair tonic in the U. S.

GOWN: CEIL CHAPMAN PHOTOGRAPH: MARK SHAW

fragrance is your busines...



Whatever your requirements in
materials for perfumes and cosmetics, Givaudan
is equipped to give your demands
undivided attention. We offer a

VERSATILE SERVICE

that is geared to meet the
needs of small users and large . . .
and to provide to both, with equal consideration,
the advantages of our research and
perfume laboratories and the cooperation
of our experienced staff.

nes....and ours

"Yours For Quality
In All Things Fragrant"

Givaudan-Delawanna, Inc.

330 West 42nd Street, New York 18, N. Y.

Branches: Philadelphia • Boston • Cincinnati • Chicago • Seattle • Los Angeles • Toronto

Mallinckrodt

mercurials

— active ingredient in many drugs

Mercury serves man well in filling important medical needs. For instance, *Mercuric Acetate* is now used as a reagent in the manufacture of organic diuretics. Mallinckrodt Mercuric Acetate for this purpose is carefully controlled to assay not less than 95.0% nor more than 98.0%.

Qualities found in Mallinckrodt mercury products are high purity and controlled uniformity.

Mercuric Oxide Yellow USP is used in antiseptic eye preparations.
Mercurous Chloride Mild NF (Calomel) is used as a cathartic and local antiseptic.
Mercuric Chloride USP, used as a disinfectant and in scalp preparations, comes in three grades: granular for tablets, powder for dry mixes, and crystals for solutions.

a reliable source is important...

Mallinckrodt, during the past 87 years, has been a chief source of raw materials for pharmaceutical manufacturers. Through experience, they have learned that Mallinckrodt supplies chemicals in consistently controlled physical form...always pure, always dependable.

Mallinckrodt® Since 1867

PRIME PRODUCER OF CHEMICALS FOR THE PHARMACEUTICAL INDUSTRY

Mallinckrodt Chemical Works

Mallinckrodt Street, St. Louis 7, Mo....72 Gold Street, New York 8, N. Y.

Chicago • Cincinnati • Cleveland • Los Angeles • Philadelphia
San Francisco • Montreal • Toronto

The doctor and the pharmaceutical manufacturer

by William B. Hildebrand, M.D.
PRESIDENT OF THE AMERICAN ACADEMY OF GENERAL PRACTICE

I should like to call to attention some of the statements made to me and some of the philosophies that have been expressed to me by many medical groups over the country with whom I have come into contact these past few years. I believe that these statements and philosophies relative to your practices might have a bearing on some of the unsolved problems confronting you as manufacturers.

Our mutual area of common interest is large indeed. Not only are we inexorably intertwined from a financial point of view, but a review of our recent history indicates that we have followed a common pathway leading out of the realm of highly ineffective practices into a world, where, together, we can and do perform services of increasing value for the good of the general public.

Today the doctor can treat most of his patients with some assurance that his efforts will be successful or at least partially so. Why? Not only because of the many important discoveries by individuals doing research in laboratories of medical colleges and in your pharmaceutical houses, but also because of your great ability in organizing the manufacture and distribution of your products. Most of these are of real value and some are absolutely essential to the life of our patients. Because of your ability in these areas, these products are now prepared in advance and standardized. No longer does the druggist spend half or more of his time in compounding medications in his back room. Eighty per cent or more of all the prescriptions he fills are filled by preparations already compounded and made available to him by you. And, I am certain that the druggist feels that this method is better, that the preparations he dispenses are better and that their cost is lower than it could possibly be were he to prepare them in his own shop.

For all this, we are grateful to you, but we are also grateful to you for many other things. In recent years

*Abridged from paper delivered before American Pharmaceutical Manufacturers' Association, June 6, 1955.

you have been partly responsible for the financing of our medical publications. Out of those that we receive in our office, two or three of them each month are entirely financed by pharmaceutical houses. Most other medical publications, we realize, are financed in most part by your advertisements. You are also responsible, I know, for the defraying of the greater part of the cost of our medical conventions through your exhibits. You support a number of fellowships in the fields of clinical research and in many instances, the hospital costs for patients who are to be studied and treated. You make available to many medical meetings all sorts of visual aids, slides, films; and, even some supply television. To be specific, through your great generosity and support of our programs, American medicine has gone much further ahead than it could possibly have gone without that support.

Yet, though we are fully conscious of the many things that you have done to make our efforts more successful; and are and always will be in your debt, there are certain improvements that we as physicians believe could be made in some of your business practices. The very first set of these improvements has to do with the selection and training of your representatives who call upon us.

First, I believe that any doctor is reasonable in expecting all those who enter his office to be gentlemen. Most of your representatives are just that, but occasionally do not live up to that designation. They do not make their names or business known to our receptionists and will not tell her who they are, only asking to see the doctor. They do not bother to learn her name nor to use it. They present no card of introduction, they come in with their bag expecting that they will be able to see the doctor next, regardless of the number of people who are in the doctor's office.

May I point out that the most important contact in the doctor's office is with the girl who is present at her desk. By and large she is the manager of the office. She can make the necessary arrangements for you and your representative or she can refuse them as she sees fit. She can either make or break you. For goodness sake, have your representative recognize that fact because his success or failure as to getting in to see the doctor depends on the impression he makes on the doctor's receptionist.

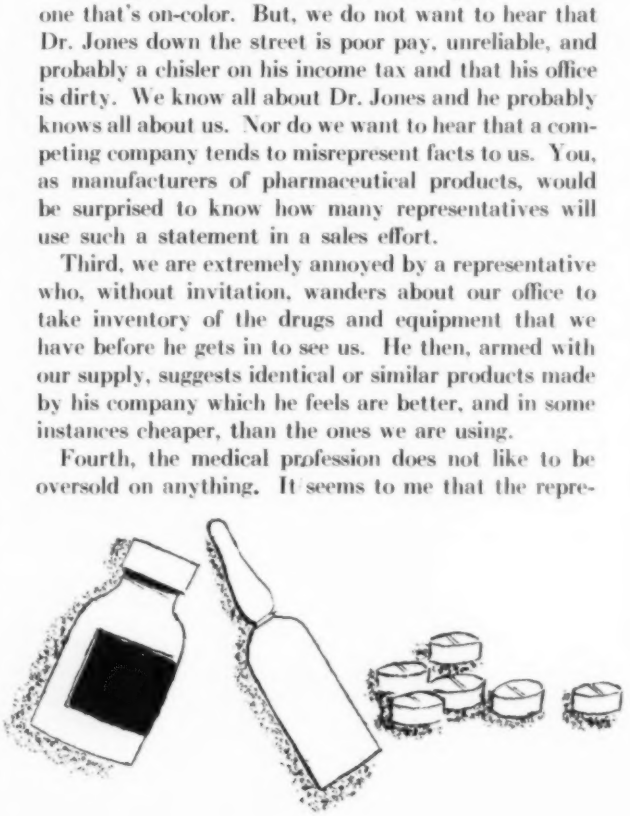
Secondly, many of your representatives fail to make appointments in offices where appointments are, because they help everyone, the accepted procedure. Some of your representatives seem to have no conception of how much of the doctor's time they take. Recently, a representative asked my receptionist if he might see me for five minutes about a very important new product. Fifteen minutes later he was still trying to talk to me about a new laxative. To put it mildly, I do not look forward to that gentleman's next visit. A practitioner told me recently that during one afternoon he had seven pharmaceutical house representatives call at his office with no appointment. Allow a minimum of 10 minutes for each of them and you can quickly see that his afternoon, as far as his patients were concerned, was knocked into a cocked hat.

Here is what a receptionist in a very prominent doctor's office where hours are held by appointment has to say: "When the pharmaceutical representative gains admission to the doctor's office on the pretext that he has but a short story to tell, minutes seem like hours before the interview is finished and he comes out." Patients sitting in the outer office are aware of who this man is and say, "If we have to call for an appointment, why can't he?"

We might also like to hear an off-color joke or maybe one that's on-color. But, we do not want to hear that Dr. Jones down the street is poor pay, unreliable, and probably a chisler on his income tax and that his office is dirty. We know all about Dr. Jones and he probably knows all about us. Nor do we want to hear that a competing company tends to misrepresent facts to us. You, as manufacturers of pharmaceutical products, would be surprised to know how many representatives will use such a statement in a sales effort.

Third, we are extremely annoyed by a representative who, without invitation, wanders about our office to take inventory of the drugs and equipment that we have before he gets in to see us. He then, armed with our supply, suggests identical or similar products made by his company which he feels are better, and in some instances cheaper, than the ones we are using.

Fourth, the medical profession does not like to be oversold on anything. It seems to me that the repre-



sentative who gives a brief and balanced presentation of the advantages of his new product or perhaps a change and improvement over an old product will, in the long run, gain the practitioner's confidence far more than the one who oversells and distorts.

I think that most of us want straight forward, honest presentations of your products. The physician reacts surprisingly like other human beings.

Neither does he want to be given a primary course in Physiology and Chemistry, though goodness knows many of us might well again study our basic sciences. The doctor does not want to hear patter, that obviously the representative has learned recently by heart from some sales tract that has been sent to him. Of all the things that doctors say about detail men, I believe this is the most annoying. It is extremely easy to determine whether a representative actually knows the pharmacology of the drug he is discussing or whether he has learned it from promotional material and is merely regurgitating it.

If the representative is fair and honest with us, we instinctively feel confidence in and partiality towards the person and his company. If, as often happens, there is little to choose between product A, B, and C, the practitioner will make his selection on the basis of how he feels about representatives of companies A, B, and C. Such is my own personal procedure in choosing pharmaceuticals for the use of my patients.

Fifth, we expect your representatives to be well informed and to know their products. Such a knowledge surely implies that he should be familiar with the required technical language. Not all of them are trained in this respect. From observation, I have felt that perhaps the ideal salesman for a pharmaceutical house is a man with a background of pharmacy college training. If he has the other attributes of a good representative, it seems to me that he makes the best representative. I know several graduate pharmacists who are representatives of pharmaceutical concerns who are excellent men, men whom I admire and men who I am happy to see at any time. Some representatives are real traveling libraries to us, giving us research material that we might never get otherwise.

Certainly, this is not the only professional or academic background that can make good sales representatives, but I do think that all of your men must have a feeling for medicine in all of its phases to be successful.

Sixth, it goes without saying that cleanliness and personal hygiene are of the utmost importance to a representative as well as the company that he represents. This seems, on first glance, to be a triviality but it is a basic and fundamental component of success because it is the sum total of many trivialities that finally make any man what he actually is. There is nothing that appeals more to the average doctor when a newcomer enters his office for the first time than good personal grooming and appearance. Such a policy should be in the very first page of a sales training manual.

Seventh, knocking a competitor and his product as an inferior by the sales representative only gains ill will. If I were in charge of sales and representative training, I would insist that only praise be given to competitive products if they were mentioned during an interview. A positive approach, telling the advantages of a product in question will create much more good will and result in greater sales.

Now the second set of what I hope are constructive criticisms and which have been expressed to me by doctors all over the country have to do with your many publications. Let me quickly say that many of them are excellent. The regular publications of many drug houses combine well-written copy with excellent use of color; as publishing ventures they rank on the highest level and in many respects compare favorably with the more popular medical publications. Generally the subject matter in such pharmaceutical publications is treated judiciously and follows profound research and careful, clear exposition.

Another excellent group of publications are the digests on various new advances in medicine. One of the best I have seen is a recently published pamphlet concerning an important antibiotic. In five pages it contains all of the essential and latest information in the use of this antibiotic. An index and bibliography covers almost 40 pages. One can pursue any aspect of this subject at length if he desires to go further. Such digests are of immeasurable help to the busy general practitioners in their daily problems.

However, some of your promotion leaflets are not so helpful. The advantages of your products are, in such cases, apt to be considerably more optimistic than the facts justify while the disadvantages are apt to be similarly minimized. Although I fully appreciate the importance of aggressive promotion to the success of your companies, I wonder whether or not this promotion sometimes needs to be a bit misleading.

The promotion of antihistamines for the cure of the common cold a few years ago illustrates this point.

(Continued on page 130)

Emulsified Lotions

by Joseph Kalish, Ph.D.

Emulsified lotions containing little or no oil are the basis for hand lotions, foundation and make-up lotions and are sometimes characterized as all purpose lotions.

The properties that these preparations must possess for commercial distribution may be divided into two categories—physical properties and cosmetic usefulness.

Physical properties in general are those first noted by the consumer and thus possess major importance as introduction and invitation to use. The appearance of of a hand lotion is that of a translucent or opaque emulsion, usually white but sometimes tinted with pastel shades. The sheen described as "pearliness" is occasionally present and is an attractive property.

Viscosity is an important attribute of these lotions: the preparation should pour readily from its container, but not flow off the skin surface too rapidly. Moreover, the liquid cream should not thicken on standing in the bottle so that it is too hard to start. It is not always easy to formulate a preparation with a high proportion of water-insoluble components so that it flows readily, nor, on the other hand, to make one with an overwhelming proportion of water so that it behaves differently from water.

The emulsion should not separate, nor show other signs of deterioration. This is a fundamental requirement which fortunately need only be mentioned in passing. The use of preservatives and the proper balance among components is now well known and few simple preparations are likely to cause trouble.

Although not to be classified as a physical property, odor of the preparation is part of its introduction to the prospective user, and an important part, as well as an integral part of the cosmetic action of the preparation. Odor compounds should be selected with the chemical properties of the lotion well in mind. Compatibility and freedom from discoloration will differ according as the lotion is approximately neutral or slightly acid or slightly alkaline. It is not wise to assume that a satisfactory odor composition can be used without additional testing if the formula is changed in any substantial manner. Finally, on the subject of odor, within the compatibility limits imposed by the formula, it is a good idea to utilize a better odor rather than a cheaper one; the cost differential is small, while the quality difference is easily apparent to the consumer.

Although the normal pH of the skin is slightly on the acid side, there is still some controversy as to whether cosmetic preparations need to be acidic. In any event, lotions based upon emulsifying agents unaffected by acids, which includes virtually all except soaps, may be made to vary in pH from five to eight by the inclusion of small amounts of weak acids or bases without especially affecting stability.

When rubbed into the skin, lotions should not suddenly develop a watery feel, probably due to emulsion breakdown after evaporation of some of the water. The emulsifying components and general balance of the mixture should be such that there is wide range of

COURTESY JEAN NATE

composition during which a reasonably good emulsion can exist. This will assure the continued emulsion, emollient feel during the time the lotion is being rubbed into the skin.

Finally, the use of the emulsion should do something for skin. Along the lines of the old but not necessarily outmoded glycerin and rosewater, a humectant, which may be glycerin, a glycol or sorbitol, should be left on the skin. This will tend to rehumidify the skin and also retard loss of moisture, a prime factor in the cause of skin dryness.

Emollient ingredients, in terms of modern belief, have in themselves little ability to soften the skin, but the film they leave has two-fold importance. First, the film of oily material may seal in moisture and by preventing water loss keep the skin soft or make it so. The film itself will cover the skin and produce a desirable soft, matte surface.

Chemically, emulsified lotions consist of an aqueous phase, an oily phase and an emulsifying system. The aqueous phase usually contains dissolved ingredients, the oily phase may be a complex mixture of oils and oil-like components and the emulsifying system may consist of one or more ingredients. The composition of the mixture will depend upon its intended use. In this instance the discussion will be limited to those liquid emulsions containing little or no actual oil and intended for the most part for use as hand or foundation lotions.

Classical theory relates the stability, viscosity and other physical properties of the emulsion to the proportions of the oil and the water and to the fineness of subdivision of the internal phase. This is true enough of simple mixtures stabilized by a small amount of a single emulsifier working only through its reduction of interfacial tension between the oil and aqueous phases. This is certainly not true, however, of the more complex mixtures used in cosmetic lotion formulation, where the emulsifying agent is often combined with an auxiliary or thickening compound. As a matter of fact, by the proper selection of formula, a relatively thick, creamy emulsion can be made with no oil and with a small proportion of non-aqueous ingredients.

As concerns formulation, much information of a trustworthy nature has been issued by suppliers of emulsifying agents. Representative examples will be reproduced here, with the usual suggestion that the formulas serve as a basis for further development to prepare individualized products.

Ceramol[1] is a self-emulsifying wax containing 90 per cent of a mixture of cetyl and stearyl alcohols together with 10 per cent of the sulfated higher alcohols.

(Continued on page 114)

A.P.M.A. meeting

In a lengthy resolution, the American Pharmaceutical Manufacturers Association commended Dr. Jonas Salk and his co-workers, commended the companies which undertook production of the poliomyelitis vaccine while it was still under test, urged that the public be made aware of the "vast production problems connected with producing on short notice large quantities of any vaccine or drug which has been newly discovered or proven, condemned "any interference by Federal legislation or regulation which will regulate or control the distribution or sale of the vaccine or any other drug product over and beyond present controls of safety, purity and standards of potency, as unnecessary and undesirable in the public interest," and warned against "measures which may be proposed for regulating the distribution or sale of the poliomyelitis vaccine, in view of the great emotional interest and confusion of the public arising out of the current discussion of this problem, and which may have the more dangerous long-range effect of socializing both medicine and the drug industry."

At the annual meeting of the Association held at White Sulphur Springs June 8 to 10, another resolution commended U. S. Narcotic Commissioner Harry J. Anslinger "for his many signal contributions to mankind, for his unstinting service to his country in many capacities over an unbroken period of 37 years, for his service as Commissioner of Narcotics for the last 25 years and for his outstanding contributions to the pharmaceutical industry and the medical profession in the regulation of the production, distribution and use of narcotics."

Kenneth F. Valentine, president of Pitman-Moore Company, president-elect of the Association for the past fourteen months, became president for the coming year. Elected as president-elect, to become president a year from now, was Dr. Robert K. Cutter, president of the Cutter Laboratories, Berkeley, Calif. Both Mr. Valentine's company as well as Dr. Cutter's are makers of the Salk poliomyelitis vaccine, and by Dr. Cutter's election, the Association and the industry expressed its confidence in Dr. Cutter personally as well as in the firm which he heads.

Further than this, Retiring President Robert A. Hardt in his presidential address, expressed the thought that difficulties such as have been experienced by the Cutter Laboratories are one of the risks inherent in the development and production of new and efficacious products by the pharmaceutical industry. "It is a risk which we all take," he said. Then he expressed full confidence in Cutter Laboratories, and concluded by saying, "God bless the Cutters!"

In addition to these expressions of confidence in Dr. Cutter and his firm, was the statement of Bradshaw Mintener, Assistant Secretary of Health, Education and Welfare, who said that he was certain that the Cutter firm would come out all right.

In addition to the elevation of Mr. Valentine to president and of the election of Dr. Cutter as president-elect, Francis C. Brown, president of Schering Corporation, was reelected eastern vice-president; William B. Graham, Baxter Laboratories, was reelected central

Kenneth F. Valentine, president of Pitman-Moore Co., new president of A.P.M.A.

vice-president; and Jack H. Boyle, Boyle & Company, was elected western vice-president. S. B. Penick Jr., president of S. B. Penick & Company, was reelected treasurer.

Elected as a director of the Association to fill out a two-year vacancy was Evan P. Helfaer, president of Lakeside Laboratories. Elected as directors for three-year terms were Edmund R. Beckwith, Warner-Chilcott Laboratories Division of Warner-Lambert Company; Edgar L. Patch, The Armour Laboratories; Henry S. McNeil, McNeil Laboratories; Floyd K. Thayer, Abbott Laboratories, and retiring president Robert A. Hardt, Hoffmann-La Roche Inc.

Mr. Hardt limited his address to suggestions for future Association policy. Speaking on fair trade, Mr. Hardt said that 1955 has been called the "year of decision," and that in the best interest of the pharmaceutical industry fair trade should be kept as an effective means of keeping the essential retail drug trade in a healthy condition.

"Should fair trade be destroyed by those who are well meaning but cannot see how it is in the public interest, we shall, in my opinion, return to chaotic conditions in the market place," said Mr. Hardt. "This chaos will necessitate the return to legislation of some type which will make it possible for retailers to compete with predatory price competition."

On the matter of public relations for the industry, Mr. Hardt advised that the Association collaborate closely "in any industry-wide public relations program which might be undertaken as a result of the appraisal which has been initiated by organizations within this industry."

Speaking of derogatory advertising in the pharmaceutical industry, Mr. Hardt indicated that an increasing number of advertising pieces distributed by manufacturers nowadays "take pot shots at competitive products." He cautioned the manufacturers to be on guard against exaggeration, advising that "we should not take from the medical literature that which suits our purpose and ignore that which does not."

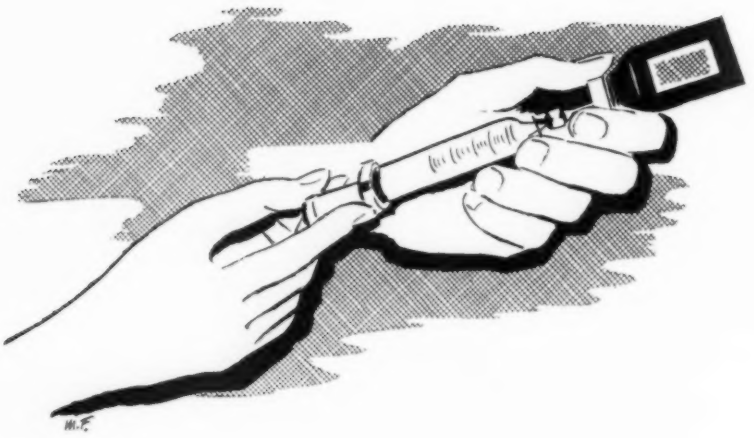
Saying that no manner of legislation can be devised to prevent product duplication, Mr. Hardt suggested that manufacturers be cautious in this activity since he feels that an "economic brake" is becoming evident and that its effects will become more marked in the future.

"New product introductions involve expenditures of hundreds of thousands of dollars within the first half year," said Mr. Hardt. "Failures in new product introduction are tragic in loss of time, loss of morale and loss of dollars. Even with the best promotion, a new product has little chance of success unless it makes a really tangible contribution to therapy. This contribution must take the form of faster, safer, more economical or more convenient therapy for either the patient or the physician."

Dr. Albert H. Holland Jr., medical director of the Food and Drug Administration, said that FDA offi-

(Continued on page 128)

Polio and Politics



As everyone from the scientist to the politician gives advice on the proper handling of the Salk vaccine muddle, the problem still facing the pharmaceutical industry is how to overcome this just-about-complete expose of the difficulties and the dangers inherent in the introduction of a new potent therapeutic agent. For surely in the case of the Salk vaccine the industry has been working in a goldfish bowl. When the difficulties are resolved and a one hundred per cent safe Salk vaccine can be produced in sufficient quantity, it is true that the average person, as well as the average physician, will hold in their memory little of the facts concerning the introduction of the vaccine. However, if another similar situation should arise concerning a new product of one or more manufacturers, the story of the Salk vaccine would be dragged out and again impressed upon the public and professional minds.

But further than this, steps should be immediately taken to prevent the industry from being put in a bad light in the future. This experience has proven to the industry that the blame can be placed on the industry even though it is blameless. A vaccine was developed by scientists not connected with any manufacturer. Manufacturers were asked to make the vaccine. Procedures and tests were worked out and the product was released for trial. In the production of this vaccine, the laboratory of its discoverer as well as the U. S. Public Health Service were partners. They established testing requirements and they, as well as the manufacturers, performed these tests.

But this year, the manufacturers were told to go ahead on their own. And they did. Using the methods used before, and relying on the same tests, they went ahead. They sent samples of their batches and copies of the reports of their tests to the U. S. Public Service. The vaccine was released by the U. S. Public Health Service for use. Then came the trouble.

It has since been determined that at least two things were wrong. One was the method of producing the vaccine in certain cases, and another was the method used for testing the vaccine for safety. There are scientists who say that at least one of the strains of polio virus used should be eliminated and replaced by a less virulent strain. Then are other scientists who still favor the live virus for the vaccine. But the more the argument goes on, the more it becomes apparent that the manufacturers of the vaccine are completely blameless. Further than this, these manufacturers undertook the manufacture of polio vaccine as a public service. They made the vaccine for the 1954 trials at no profit. They also agreed to produce large quantities for the National Foundation for Infantile Paralysis this year on a similar basis.

But when the bad news concerning the vaccine broke, the newspapers started immediately to give bad press to the manufacturers. They even pictured them as gougers by quoting the prices that manufacturers were quoting on the vaccine. With absolutely no knowledge of the pharmaceutical industry, they garbled the prices, not knowing that different prices are quoted by different manufacturers for different classes of buyers.

While the violence of the storm which broke over the heads of all who had anything to do with the introduction of the Salk vaccine was due to the great emotion concerned with poliomyelitis, a storm of the same intensity might arise in the future over a remedial agent for still another disease. It is true that, because children are mainly involved in polio cases, public interest in this disease is inordinately high. This is easily proven by the fact that contributions by the public for polio control have for many years been much greater than contributions for diseases which affect many more people and are truly much more important health problems.

But it must also be realized that public interest in health problems and diseases is today at an all time high. This is why newspapers and other periodicals

(Continued on page 112)

Acid Cosmetics *by Harry Hilfer*

Since the normal pH of the skin is slightly acidic there has been a great deal of conjecture as to the possible benefits that may be derived from preparations of the same pH. There are still arguments pro and con with respect to this idea, but there have recently appeared several preparations on the market with an acidic pH. There will be no attempt here to discuss the theories but rather to discuss the mechanics involved in these newer preparations.

The first generalized acid cream aside from the absorption base types of lemon creams could be regarded as the anti-perspirant creams whose function was due to the use of aluminum salts. In order to keep the aluminum ion in solution the cream itself had to be stable at an acid pH. These creams therefore depended upon the use of glyceryl monostearate to which an acid-stable emulsifier was added. These included the use of the alkyl aryl sulfonates, sulfated, lauryl alcohols and the sapamines. Under these conditions a sufficiently large water phase was introduced into the cream to keep the aluminum salts in solution. With the advent of the newer non-ionic emulsifiers a greater diversity in formulation also was possible.

Shampoos, theoretically should be more effective at an acid pH, since under these circumstances any adherent calcium soaps from previous washings should also be removed. By so doing the luster of the hair would be greatly enhanced. There are some such preparations now on the market particularly in the clear shampoos, but preparations with a pH of about eight still enjoy great popularity. This is possibly due to the greater foaming ability that goes with the increased pH.

Of greatest current interest are the currently available hand lotion types of preparations, in which the pH is acidic. These lotions are pointed towards the large hand lotion market and the baby lotion market as well. A film which is slightly acidic seems to be particularly well suited for a baby lotion. Since the primary irritant which the baby encounters is ammonia formed from the degradation of urine, the acidic film would neutralize to a great extent the excessive irritating alkalinity so introduced. In line with the development of these preparations have been a careful investigation of the use of quaternary ammonium compounds.

The quaternary ammonium compounds are relatively new agencies for use in cosmetics, but have been used extensively in the textile industry for a much larger period of time, and much of their use in cosmetics is traceable to their original use in textiles. Since they are cationic materials, that is, the large chain group bears a positive change and is therefore attracted to the cathode electrode on electrolysis—they are easily adsorbed and substantive to bacteria and proteinaceous materials in general. Their effectiveness as germicides in not too well understood but this substantive effect is generally thought to be one of the reasons since it interferes with the organism's respiratory cycle. The quaternaries best suited as germicides usually bear an hydrophobic chain of twelve carbon atoms. When the chain length reaches eighteen carbon atoms they are more readily substantive, though they usually lose their bactericidal potency to a marked extent. It is the eighteen carbon atom compounds that seem to do the best job in imparting the desirable soft"hand" to textiles.

This property of the quaternaries to impart a rich soft "hand" was first applied in cosmetics to the hair rinse preparations, where the appropriate quaternary suitably diluted is used on the hair after a permanent wave or a shampoo and then rinsed off. The residual substantive layer reduces the frizzy "feel" of the hair after the wave processing and after the shampoo. These preparations remove any residual calcium soaps because of their acidic pH and make the hair feel softer if there has been too great an oil removal during the shampoo process. These products all seem to have been highly acceptable additions to the regular cosmetic line.

This foregoing all leads to the current use of quaternary ammonium compounds in hand lotion, and creams. In any discussion of preparations of this type it would appear that its primary function is to make the hands feel soft and secondly to exercise some protective effect against the usual household tasks which involve immersion of the hands in soapy water. In theory, at least, the use of the quaternary ammonium compound would impart both functions to these products. Quaternaries

(Continued on page 127)

The acid mantle factor in

FRAGRANCE FOUNDATION

The significance of the acid mantle factor of the skin is achieving greater importance in the field of topical application both in the dermatological specialty and the cosmetic industry.

The acidity or alkalinity of the skin, under a wide variety of conditions, is implied in the term "cutaneous reaction." Normally, the epidermis is slightly acid, and is measured in terms of hydrogen ion concentration of the fine film covering the skin surface. It has been established that functions of the pH and those of the biochemical processes are notably interdependent.

The eccrines or "small sweat glands" are the true secretory glands. They produce the colorless aqueous sweat responsible for heat regulation, and their distribution in the body surface is found only in man. The apocrines or "large sweat glands" are vestigial, and are present in the nasal and aural orifices, axillae, perimammary, perineal, and anogenital areas.

Normal eccrine sweat is slightly acid and consists of 99 to 99.5 per cent water; the remaining fluid content holds in solution nitrogenous compounds, lactic acid, glucose, dicarboxylic amino acids, normal fatty acids, electrolytes, and water-soluble vitamins.[3-4] In women, the pH is about 0.5 unit higher than in men. The sweat of adults is more acid than that of children. Sweating with free evaporation increases surface acidity. The forehead and limbs may give limited values of a pH from 4.5 to 5.5; in the groin and the interdigital surfaces of the toes, the pH is higher (6.0 to 7.0), and still higher values may be obtained in the axillae, where the aprocrine sweat is alkaline.[4-5-6]

Hurley and Shelley[7] demonstrated by special histological staining methods that innervation of eccrine sweat glands is due to cholinergic (parasympathetic) stimulation. They also assert that apocrine sweating is exclusively under the influence of the adrenergic (sympathetic) stimulation. The method is based upon demonstration of an enzyme, specific cholinesterase (ChE). This brilliant contribution in the dermatological field should be further studied by cosmetic chemists to interpret a possible mechanism of the anti-perspiration action of aluminum and zirconium compounds.

A profuse secretion of sweat will increase the skin's resistance to both alkali and acid. Chemo-microscopic examination of the sweat duct openings of the palms shows marked chemical differences in normal sweat.

*Abstracted from proceedings of the Scientific Section of the Toilet Goods Association, Inc., No. 23, May, 1955.

topical application*

by Irwin I. Lubowe, M.D.
DEPARTMENT OF DERMATOLOGY, NEW YORK UNIVERSITY BELLEVUE MEDICAL CENTER, NEW YORK

For experimental purposes, Blank[4] classified the sweat secretion into two types, profuse and intermittent. A combination of both types was also studied. Except for reducing substances the intermittent perspiration proved to be the most concentrated of both types investigated.

The Acid Mantle

Marchionini[3] postulated that a fine film exists on the surface of apparently dry skin, which acts as a therapeutic barrier against bacterial or fungal invasion. He called it "the acid mantle of the skin," and reported, in a series of studies (using the quinhydrone method of analysis), that an acid pH concentration is inherent in the natural ability of the skin to resist pathogens. Marchionini found several inconsistencies among adults in this acid sheath, such as the axillae, anal region, interdigital spaces, and certain portions of the soles. In non-intertriginous areas, such as the midline of the chest and back, which show a predisposition for seborrheic dermatitis, a higher pH was found. Intertriginous areas, because of their relatively high surface pH's were found especially vulnerable to surface infection, as moniliasis. Most epidermal surfaces showed a pH range from 3.0 to 5.0, although the reaction becomes less acid with the onset of sweating, and subsequent dilution of the higher acid concentration on the surface. However, after progressive evaporation of fluid from the sweat content, a highly acid reaction re-occurs. Schade[9] confirmed these early results in vitro. Marchionini's observations met with considerable controversy during his early investigations, but later workers corroborated his findings, while recognizing that other factors also play a role in protecting the skin against bacterial invasion.

Anderson[10] recently reported that an acid pH is essential to produce bacteriostasis of skin against invading pathogens. Goldsmith and Hellier[11] also emphasized the role of the acid mantle in reduction of skin pathogens. Rothman,[6] in his excellent volume, declares that although the surface acidity has proven slightly lower than Marchionini's range, his experimental statistics, in the main, have been reproduced.

pH of the Normal Skin

The normal cutaneous surface is acid, and maintenance of the acid state depends upon the character of the sweat, the normal acid-base balance of the body, and an intact keratin layer. The cutaneous reaction is measured in terms of pH concentrations on the surface of the skin. These readings were obtained originally by the use of chemical indicators, but these methods proved to be inaccurate since they did not detect small changes in the reaction. Electrical meters, as Beckman's potentiometer, with glass electrodes are in current use for this purpose, and project highly accurate readings.

Jacobi and Heinreich[12] presented a comprehensive paper at the May 1954 meeting of The Toilet Goods Association which was illustrated with original charts for descriptive purposes. They described the existence of three areas of activity of the skin; namely, the external, or acid mantle, which contains free acids, is buffered, and has a pH of 5.5; a second line of defense, which is the true epidermis and is buffered. It possesses a physical and chemical barrier, and has a pH of 6.0. Finally, there exists the corium, or subepidermal layer, which contains the dermal appendages, fibrous, elastic tissue, and blood vessels, and is buffered, and has a pH of 7.3.

In a study of normal subjects, Blank[4] measured the pH of the skin surface of 100 male medical students and 100 female nurses in the age group 19-27 and established the following criteria:

1. The pH of the exposed areas varies from four to seven, but most of the readings are between 4.2 and 5.6.
2. Average pH of females is about 0.5 higher than pH of males.
3. The extensor surfaces of the arms are slightly more alkaline than the corresponding flexor surfaces.
4. The antecubital region is the most acid area on the arm.

Using similar techniques, Draize[13] confirmed these findings and also reported that the surface pH of negro males is higher than that of white males.

Very little difference has been reported in the normal pH concentration on the skin surface. However, it may be reduced by two units in hot weather, and in skin areas where sweat does not evaporate, such as certain sections of the soles, and in the interdigital spaces where a lowered acidity is always found. This reduction is not accounted for by increased sweating, since sweat reaction tends to become alkaline after prolonged secretion. Some believe that this is due to differential evaporation during which period an increased concentration of fatty acids develop on the surface. According to Rothman,[6] however, while these fatty acids do influence the pH of the sweat, the majority of them are high molecular acids whose water solubility is negligible.

Normal skin acidity is produced mainly by lactic acid, and other fatty acids of the acetic series present

(Continued on page 131)

A study of anti-dandruff agents*

by Herbert J. Spoor, Ph.D., M.D.

ASSISTANT PROFESSOR DERMATOLOGY,
NEW YORK MEDICAL COLLEGE

Dandruff, or scaly disease of the scalp is the common name given to the dermatological conditions known technically as pityriasis capitis, seborrhea sicca or seborrhea oleasa. In its simplest state, the continuous but normally imperceptible sloughing of the outer epidermal layers of the skin has become grossly visible. The scale consists of desquamated epidermal cells plus accumulated secretions and acquired soil. When there is no overactivity of the oil producing sebaceous glands, the condition is called pityriasis capitis or seborrhea sicca, with excess oil production it becomes seborrhea oleosa and if it is accompanied by an erythematous or eczematized involvement of the outer skin itself, it may develop into the clinical entity, seborrheic dermatitis.[1]

Normally, the gradual sloughing of the dead, hardened outer epidermis, exactly balances the constant production of new cells from the germinal layer below. This property of continuous growth is common to all animal skin, but human skin differs from that of the lower animals in that there are many more layers of viable and partially viable cells between the living germinative basal layers of the epidermis and the tough outer fully keratinized layers. In the human, therefore, any disturbances in the balance established between the constant production of new cells and the rate of sloughing of the old may lead readily to formation of the visible masses of epidermal cellular debris. Because man controls his body temperature by sweating, the epidermis is in contact with a great deal of moisture and therefore, relatively thick masses of epidermal cells tend to lose their intercellular cohesion and when the slough, do so as aggregate masses. Naturally these aggregates may vary with the condition of the epidermis and that in turn may be a function of the individual's genetic makeup, his age, sex and race.

Another important factor which influences the production of dandruff or visible scale is the amount and quantity of the sebum secretion. Practically any emollient when properly dispersed can smooth and flatten out dry horny skin layers without affecting normal desquamation. However, should the natural emollient, the secretion from the sebaceous glands become excessive, or accumulate at the pore openings,the desquamating scale may adhere in visible oily masses (seborrhea oleosa). This scaling is most noticeable in and about the scalp or in other hairy areas because here the epidermis is bathed most thoroughly in sebaceous fluids because they are formed most abundantly in the sebaceous glands surrounding each hair follicle. The fluid is discharged in large quantity upon the hair shaft as a lubricant and protecting coating. Sebaceous secretions also furnish lubrication to the non-hairy skin, but here the emollient, slightly acid, emulsified oily lubricant is discharged directly upon the skin surface through pore openings which are associated with lanugo or primitive hairs. Quantitatively, much less oil reaches the surface on the hairless, glabrous skin, and then it is dispersed more broadly than in the hairy areas. Therefore, dandruff is seen much less frequently on the non-hairy skin. The amount of oily sebum is greatly influenced by the genetic pattern of the individual himself, by his nutritional status, and by his body's endocrine balance. In general, it may be said that the more dark skinned individuals secrete more sebum than do those of lighter skin color. The younger individual has more skin oil than the older and the male more than the female. Nutritionally, increased intake of fats or their impaired metabolism due to deficiency of, or improper utilization of Vitamins A,E or the B group may alter sebum flow rates. Specific foods or allergens may aggravate conditions of oil excess. The existence of a relationship between steroid hormone levels and the development and function of the sebaceous glands is ac-

*Abstracted from Proceedings of the Scientific Section of the Toilet Goods Association, Inc., No. 23, May, 1955.

cepted. Generally, testosterone, the male hormone, promotes both the growth and excessive function of the oil glands, while estrogen, the female hormone, counteracts both of these effects. These hormonal effects are not mediated directly, although there may be some rationale for the topical use of estrogens. A direct estrogen effect, the delaying of the rate of keratinization of the epidermis has been shown.[2] Recent work with the pituitary hormone, ACTH and the adrenal cortical hormone product, cortisone, shows that these two may have a far more direct action upon the sebaceous gland than do the sex hormones themselves.

The presence of excess scale and oil prepares the way for the infectious processes which are almost invariably associated with dandruff. The oil-rich, scale-laden scalp furnishes an excellent culture media for many types of bacteria, some of which may bear causal relationship to the extension of simple dandruff into clinical seborrhea.[3] The microbiology of the scalp is complicated and becomes more so as investigators improve isolation technique, increase the variety of their media and fully identify the cultured organisms, but from the standpoint of dandruff, the bacteria associated with it are invariably some member or members of the Staphylococcus genus and very frequently one or more types of the "bottle bacillus" or Pityrosporum ovale group of lipophilic yeasts.[4]

The factors which govern dandruff formations are:

1. Rate of epidermal desquamation.
2. Amount of sebaceous secretion.
3. Microbiological association—degree of infection and of host resistance to the organism involved.

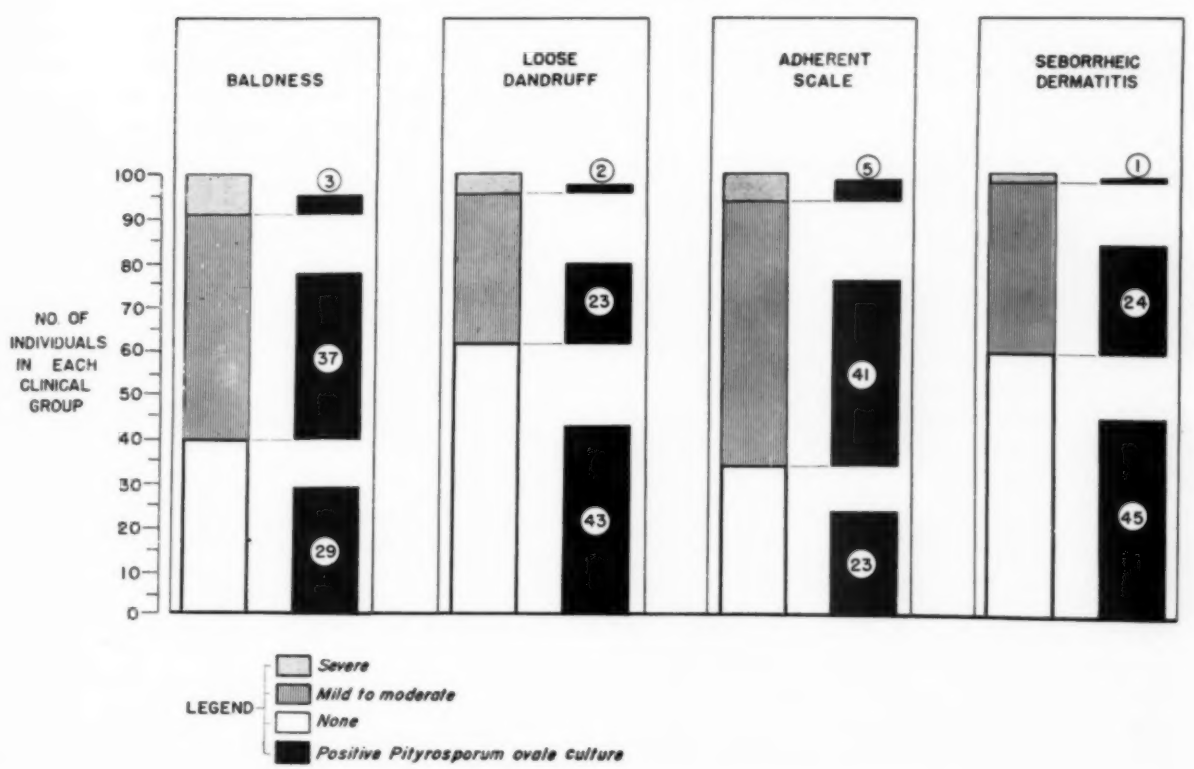
When based upon these three factors, treatment of dandruff conditions with anti-dandruff preparations is put upon a rational basis. An anti-dandruff product, then, may be an agent effective for massage, stimulation, or cleansing. It may also contain hormonal or nutritional agents, or an anti-infectious agent.

A product which cleans the scalp, frees it of adherent debris and regulates the amount of residual scalp and hair oil to retain healthful scalp conditions is an anti-dandruff preparation of the non-medicated type. All properly formulated shampoos fall into this group, as well as most of the hair lotions or grooming agents. In principle, these products are just expected to clean, but because many of the modern detergents are effective antibacterial agents, the modern shampoo may be an anti-dandruff product—not only because it removes scale and oil debris, but also because it destroys bacteria.

(Continued on page 134)

FIGURE 1

ASSOCIATION OF PITYROSPORUM OVALE WITH HAIR AND SCALP CONDITIONS



RIBOFLAVIN formulation of multivitamin parenterals

by P. E. Brumfield and H. M. Gross

RESEARCH, DEVELOPMENT AND ENGINEERING DIVISION, COMMERCIAL SOLVENTS CORPORATION, TERRE HAUTE, INDIANA.

Numerous formulation problems have always confronted the producers of parenteral vitamin solutions. This report is intended to assemble recent information pertaining to riboflavin in parenteral solutions, to amplify this information with experimental observations and research data, and to evaluate the importance of this information.

Some of the more perplexing questions arising in preparing parenteral solutions containing riboflavin are:

1. What riboflavin product is best from the standpoint of ease of solution, purity, color, and solution stability?
2. What can be done to increase the solubility of riboflavin?
3. Which vitamins interact, either with riboflavin or with each other in the presence of riboflavin?
4. What preservatives are satisfactory for use in vitamin parenterals containing riboflavin?
5. What are the effects of such factors as temperature, pH, air contact, and light upon solution stability of riboflavin?
6. What techniques can be followed to eliminate any one or more of the undesirable factors arising during formulation?

Crystalline Riboflavin Products

There are three recognized crystal forms of riboflavin[1], each of which possesses different physical properties. These crystal types are described in Table 1. In addition to riboflavin itself, many derivatives have been made by chemical reaction to result in new compounds. Of the many such derivatives, only two have had sufficient promise to warrant serious consideration; namely, the riboflavin-5′-phosphate salts[2] and methylol riboflavin[3]. In general, other derivatives, such as sulfates[4] and organic esters[5], tend to have less biological activity, especially when any position of the riboflavin molecule other than the 5′-position of the *ribityl* chain has been chemically bound. As for the two promising compounds noted, the phosphates have had better acceptance. Ammonium, sodium and ethanolamine salts of riboflavin-5′-phosphate have been marketed. A current product[7], an improved sodium riboflavin-5′-phosphate is produced by a carefully controlled process. Present information indicates that both the methylol and the phosphate derivatives have the full calculated biological activity. Earlier reports[8] of only partial activity were apparently based on impure materials.

Procedures for Dissolving Riboflavin in Water

In preparing aqueous solutions of riboflavin, four conditions have been chosen arbitrarily for discussion.

1. Agitation of riboflavin in water at room temperature.
2. Heating of an aqueous suspension of riboflavin to 70-100° C.
3. Room temperature agitation of riboflavin in water containing added solubilizing agents.
4. Heating of an aqueous suspension of riboflavin and an added solubilizing agent to 70-100° C.

Table 1. Comparison of the Physical Properties of Riboflavin Crystal Types

Property	Type A	Type B	Type C (ref. 1,6)[e]
Crystal appearance (under microscope)	long hair-like fibers	short thin needles (some clumping) or balls	short wide needles (usually clumped) or flat tapes
Hygroscopicity (per cent H_2O absorbed in 24 hrs. at 50 per cent R.H. and 25° C.	none	about 2 per cent	about 5 per cent[a]
Purity (per cent assay) (dry basis)	99+[b]	98+	98+
Solubility[c] (mg/liter at 25° C.)	50-100	150-250	500-1400
Appearance of ground powder	fluffy	moderately dense	moderately dense
Wettability (dropping powder into water with no wetting agent)	poor	fair	excellent
Electrostatic behavior of untreated powder	becomes charged	no charge	gains slight charge
Optical Properties			
X-ray diffraction patterns—quite different for the three types (ref. 1)			
Polarizing microscope—quite different for the three types (ref. 1)			
Infrared absorption—quite different for the three types[d]			

Notes: (*a*) *Small amounts of moisture cause Type C crystals to revert to Type B.*
(*b*) *Type A crystals usually give lightest colored, clearest solutions.*
(*c*) *About 0.2 g. of solid stirred vigorously for 15 min. in 100 ml of water, filtrate assayed.*
(*d*) *A limited study was made in these laboratories of the infrared absorption of Nujol suspensions of various crystal types and riboflavin derivatives. Difficulty with uniformity of film thickness resulted in absorption curves of insufficient quantitative accuracy for publication.*
(*e*) *Type C exemplified by Riboflavin R.S., U.S.P.*

As shown in Table 1, water at 25° C. will give very low riboflavin concentrations, except with Type C crystals. However, even if Type C crystals are used to prepare a clear solution at 1200 mg. per liter, upon standing a short time, crystallization will occur and will continue until the dissolved riboflavin concentration has dropped to about 250-350 mg. per liter.

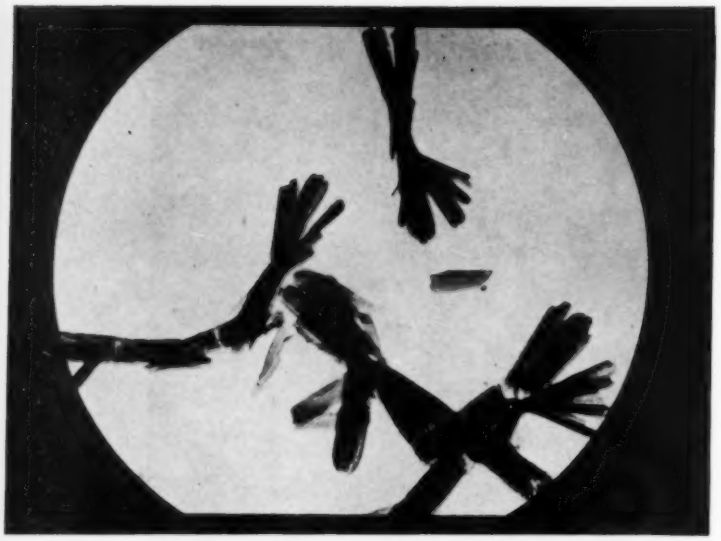
In boiling water, all crystal types will give a maximum concentration of about 1,600 mg. per liter. Upon cooling and standing, the riboflavin will crystallize from these concentrates until a liquid concentration of 250-350 mg. per liter has been reached. It has been noted, however, that up to 500 mg. of riboflavin per liter brought into complete solution at elevated temperature will stand indefinitely after cooling to room temperasure without crystallization.

Solution in water at 25° C. with added solubilizing agents has been the subject of many studies. Many organic and inorganic compounds have been used to increase the solubility of riboflavin. In general, all organic solubilizers have the disadvantage of requiring excessive amounts to appreciably increase riboflavin solubility, thereby increasing the solids content of the solution to an undesirable level for parenteral administration. Many solubilizers, organic and inorganic, have therapeutic activity, and such large amounts as are required for solubilization of riboflavin may be hazardous. Still another problem is that many promising solubilizers interact with other vitamins in multivitamin preparations.

Photomicrograph Type A crystals, Riboflavin U.S.P.

The use of added solubilizing agents in hot water to dissolve riboflavin is an accepted procedure. Only neutral or acidic media can be used. Heating accelerates solubilization and gives a higher maximum concentration. Of course, on cooling and standing, most solutions with added agents crystallize out excess riboflavin to the same level as can be obtained using the solubilizer in cold water. In certain cases, however, a riboflavin complex with the solubilizer is formed more completely on heating and a stable solution of higher riboflavin

Photomicrograph Type B crystals, Riboflavin U.S.P.



Photomicrograph Type C crystals, Riboflavin U.S.P. (ready-soluble)

content can thereby be prepared. Examples of this increased level are shown by gallic acid[9] and sodium 3-hydroxy-2-naphthoate[10].

Solubilizers for Riboflavin

Various types of compounds which enhance the solubility of riboflavin in water are:

1. Organic aliphatic compounds with water-solubilizing groups, such as aliphatic amidines, amides, and polycarboxylic acids.

2. Organic cyclic compounds with water-solubilizing groups attached to a heterocyclic (e.g. pyridine), benzene or naphthalene nucleus, such as: niacinamide, gentisic acid, and 3-hydroxy-2-naphthoic acid.

3. Inorganic acids, bases and salts, such as: strong bases (NaOH), strong acids (HCl), and sodium borate.

The best solubilizer for riboflavin at 25° is a solution of a strong base, such as sodium hydroxide. Up to 35 g. of riboflavin per liter can be quite readily dissolved. However, such alkaline solutions are very sensitive to heat and light, and cannot stand for more than an hour. The resulting pH of 12 is too high for riboflavin stability and therapeutic usefulness. Upon acidification, higher concentrations of riboflavin solutions form crystals at once. At 500 to 1,000 mg. of riboflavin per liter, acidified solutions will retain solution clarity for up to 24 hours.

Some patents claim an actual chemical combination occurs with certain solubilizers. It is believed, however, that most "fused masses"[11] and "refluxed solutions" have merely oriented the molecules to more favorable spacial relations for the formation of complexes. Of course, certain chemically bound compounds have been characterized, such as: phosphates, sulfates, succinate esters, etc. In Table 2A, a list of some of the patented solubilizers is given. Experiments in this laboratory have indicated that several other compounds will slightly increase the solubility of riboflavin, as shown in Table 2B.

Table 2. Compounds Used to Solubilize Riboflavin

A. Solubilizers in the Literature

	Ref.	pH	Concentrations Compound (per cent)	Concentrations Riboflavin (g./liter)
Acetamidine salts	13	—	20	20
3-Pyridylcarbinol	14	—	20[c]	>0.1
Nicotinic acid salts	15	—	5	1.0
Niacinamide	16	3.2	5	1.0
	16	4.3	5	1.0
	12	4.5	10[c]	3.0
Tyrosine amide	17	5.0	—	>0.1
Tryptophan	18	—	—	4.0
Acetyltryptophan salts	19	6.0	10	12
Urea melt	11	6.3	—	60
Urethan melt	11	—	—	20
Acetamide melt	11	—	—	25
Benzyl alcohol	20	—	2	>0.1
Phenol	66	—	0.5[c]	0.5
Veratryl alcohol	21	—	4	3.0
Benzoic acid salts	22	—	10	2.0
Salicylic acid salts	22,23	6.7	2.5[c]	2.0
	24	4.6	10[c]	4.0
p-Aminobenzoic acid salts	25	—	30[c]	40
4-Amino-2-hydroxybenzoic acid salts	26	—	20[c]	5.0
2,4-Dihydroxybenzoic acid salts	27	5.0	6.0	5.0
	28	—	5.5	5.0
Vanillin	29	—	1.0	1.5
Gentisic acid salts	30,31	4.0	2.7[c]	1.6
N-(2-Hydroxyethyl) gentisamide	32	3.5	2[c]	3.3
Gallic acid salts	9,33	6.7	10	5.8
N-(2-Hydroxyethyl)-3,4,5-trihydroxybenzamide	34,35	4.2	3	2.0
6,7-Quinolindiol salts	36	—	10	10
Boric acid salts[e]	38,40	7.5	—	10.0
	39	Low	24	100
Hydrochloric acid	41,67	Low	24	100
Sulfuric acid	42	Low	12N	73
Phosphoric acid	42	Low	12N	65
Nitric acid	42	Low	5N	8
Formic acid	42	Low	12N	40
Acetic acid	42	Low	12	10
Sodium hydroxide (etc.)	67	High	0.4	35

B. Solubilizers Tested in this Laboratory

	Ref.	pH	Concentrations Compound (per cent)	Concentrations Riboflavin (g./liter)
5-Sulfosalicylic acid		3.5	10	2.6
1,2-Naphthoquinone-4-sulfonic acid[b]		3.5	10[d]	8.0
1-Naphthol-2-sulfonic acid		3.5	10[d]	13.9
2-Naphthol-3,6-disulfonic acid[a]		3.5	10	4.5
2-Naphthol-6,8-disulfonic acid[a]		3.5	10	6.2
1-Naphthylamine-6,8-disulfonic acid[a]		3.5	10[d]	9.5
p-Phenolsulfonic acid		3.5	10	1.0
2-Hydroxy-5-methoxybenzoic acid		4.5	10	8.7

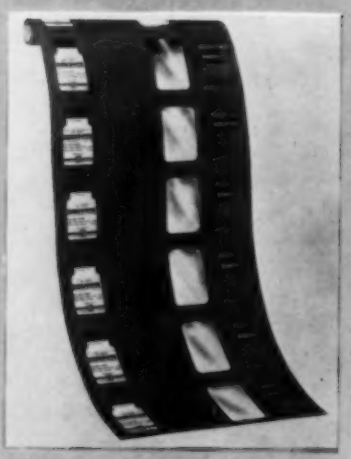
Notes: (*a*) *1,5-Naphthalenedisulfonic acid and thiamine form an insoluble complex*[50].
(*b*) *Vitamins A and D form insoluble complexes with p-benzoquinone*[65].
(*c*) *Possible physiological effects.*
(*d*) *Extreme darkening of solution.*
(*e*) *Discussion of physiological aspects*[66].

In choosing a solubilizer for riboflavin, a good base point for comparison is niacinamide. Any material requiring a higher weight ratio for equivalent riboflavin concentration would certainly be less desirable. Of critical import is the toxicity of the compound. Another factor to consider is the pH range in which the solubilizer is effective. The most efficient solubilizer found was 3-hydroxy-2-naphthoate[12]. However, the free acid is insoluble and precipitates from solution below pH 6.0, showing only trace solubility below pH 5.0. Most multivitamin preparations must be at pH 3.5 to 5.0,

(*Continued on page 127*)

Packaging and Selling

Samples of finished products using Printolam Laminating Process, showing product in transparent part of film which is heat sealed.

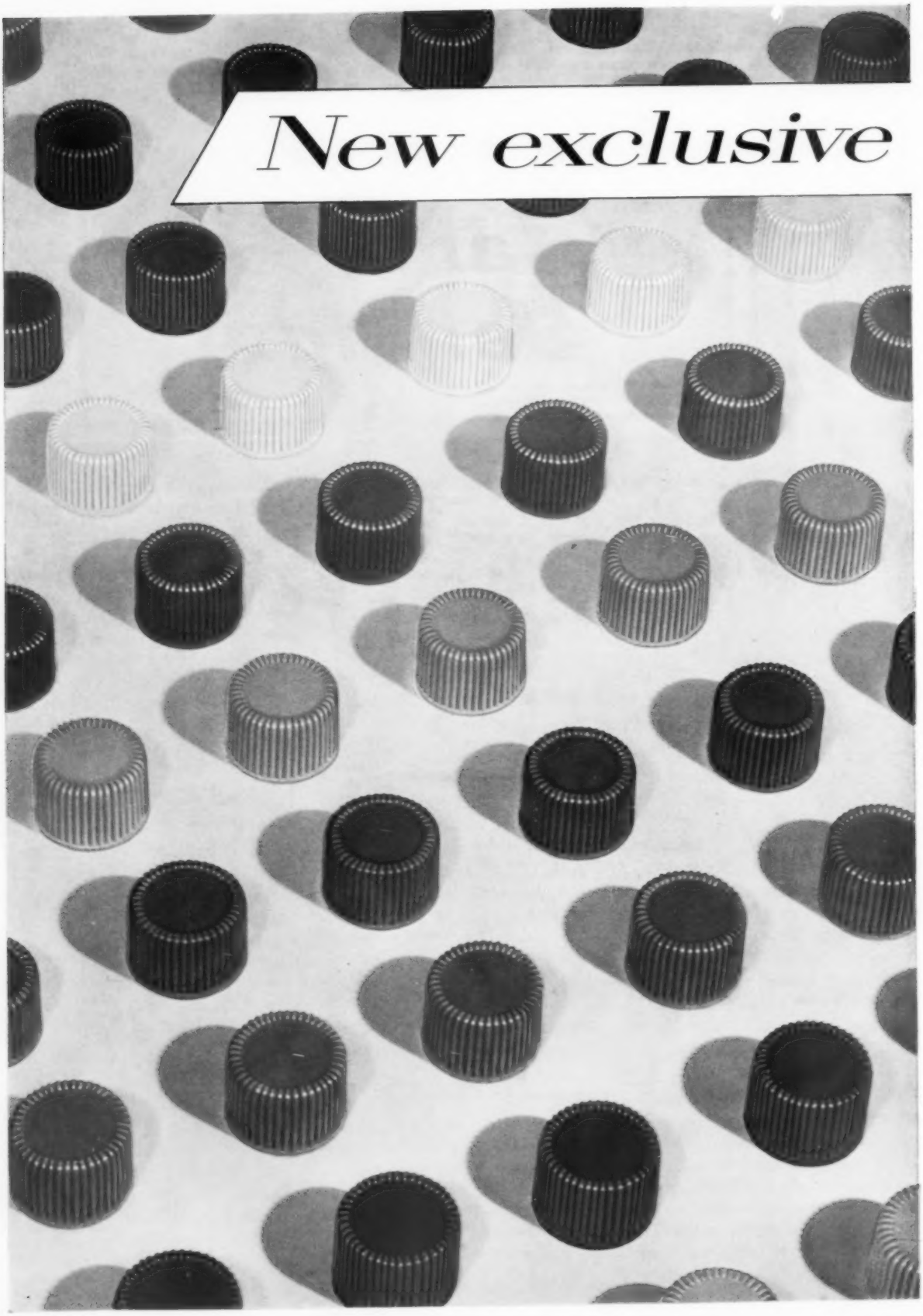


Film rotogravured in multicolor on one side.

Printon Corp., 304 East 23rd St., New York, has developed a special laminating process, the Printolam Method, which is in combination with a fine-quality rotogravure printing on film. As illustrated, typical laminations are pliofilm with acetate, vinyl with acetate or pliofilm and saran with pliofilm and other film combinations including aluminum foil. One side of the film is rotogravure printed in as many colors as desired.

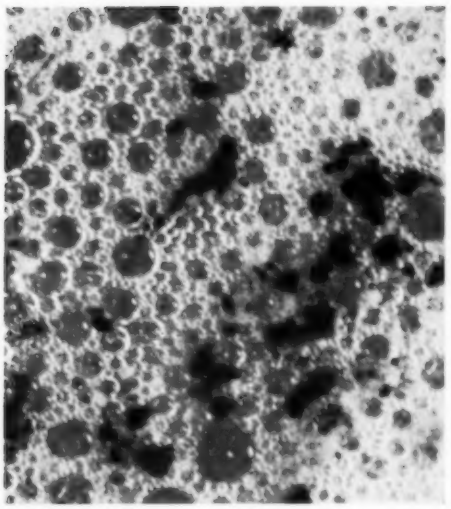
An unprinted area may be designed in the package to show the contents, and the film folded so that the printed message is both on the front and back. The product is placed on the transparent part of the film and sealed by heat crimping to produce an air-tight package.

The final package assures absolute protection to even the most soluble and delicate products, according to Printon, and certain films, depending on the nature of the product, can be used that will completely eliminate any possibility of moisture, air or gas penetration. This Printolam Method is said to be particularly suited for mass production packaging, such as strip forms for capsules, tablets, powders, creams and lotions, and it provides a relatively inexpensive method of packaging and unlimited flexibility in product arrangement, freight saving and film printing.


New exclusive

cleaning process

OWENS-ILLINOIS offers the cleanest Molded Closures ever known!



This photomicrograph shows the dust and dirt that are removed from closures in the new exclusive cleaning process.

Dust-laden caps have long been a problem for today's high-speed packaging methods and high standards of purity and quality.

Now Owens-Illinois has overcome this major problem with a new, exclusive cleaning process for molded plastic closures.

Our patented* equipment removes raw powder from the inner and outer surfaces of the closure . . . nullifies the effect of static electricity which causes dust and dirt to cling. The result: *The cleanest closures ever known.*

Owens-Illinois molded closures are today's finest. They won't rust, stick, or corrode . . . give a more positive seal and reseal. They are available in a full range of brilliant colors in various styles, shapes and sizes.

Call your nearest Owens-Illinois branch office for information about molded closures and how they can serve you better.

*Patent No. 2684560

OWENS-ILLINOIS CLOSURES
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

Magnetic MERCHANDISING

. . . for Whipped Drene Shampoo and your product, too!

In this suave push-button bottle, filled by Continental, lies the essence of magnetic merchandising for Procter & Gamble's new Whipped Drene Shampoo. Push-button containers invite immediate attention and examination . . . assure universal sales appeal. If now marketed in liquid form, *your product may gain new sales appeal* and value when packaged á la aerosol . . . in pressurized containers. And you need not invest a penny in equipment or personnel, for we can take care of all filling, storing and shipping. Write for information . . . *now!*

CONTRACT AND CUSTOM FILLING

LIQUID *SPRAY* *FOAM*

MAIN OFFICE • 123 NORTH HAZEL STREET, DANVILLE, ILLINOIS

CONTINENTAL FILLING CORPORATION

PLANTS • DANVILLE, ILLINOIS — HOBART, INDIANA

More buying appeal for cosmetic bottles

by Harrison Young
MARKETING DIRECTOR, BETTER PACKAGING ADVISORY COUNCIL

EWING GALLOWAY PHOTO

The very fact that the major manufacturers of cosmetics place their own sales girls in their best outlets rather than rely on the stores' own personnel to sell their products, shows they recognize the importance of providing customers with factual information at the point of purchase to back up their tremendous volume of advertising. Experience has proved to them that even the best known brands benefit by strong personal selling.

Now in the course of making several over-all merchandising studies, I have stood beside cosmetic counters in some of our top department stores and watched manufacturers' sales girls operate. What does their selling actually consist of? It consists of answering customer questions by giving them verbally factual explanations of what the products will do and why. And if this kind of selling were not successful, manufacturers would long since have discontinued it.

How Wide Distribution Dilutes Your Retail Selling Support

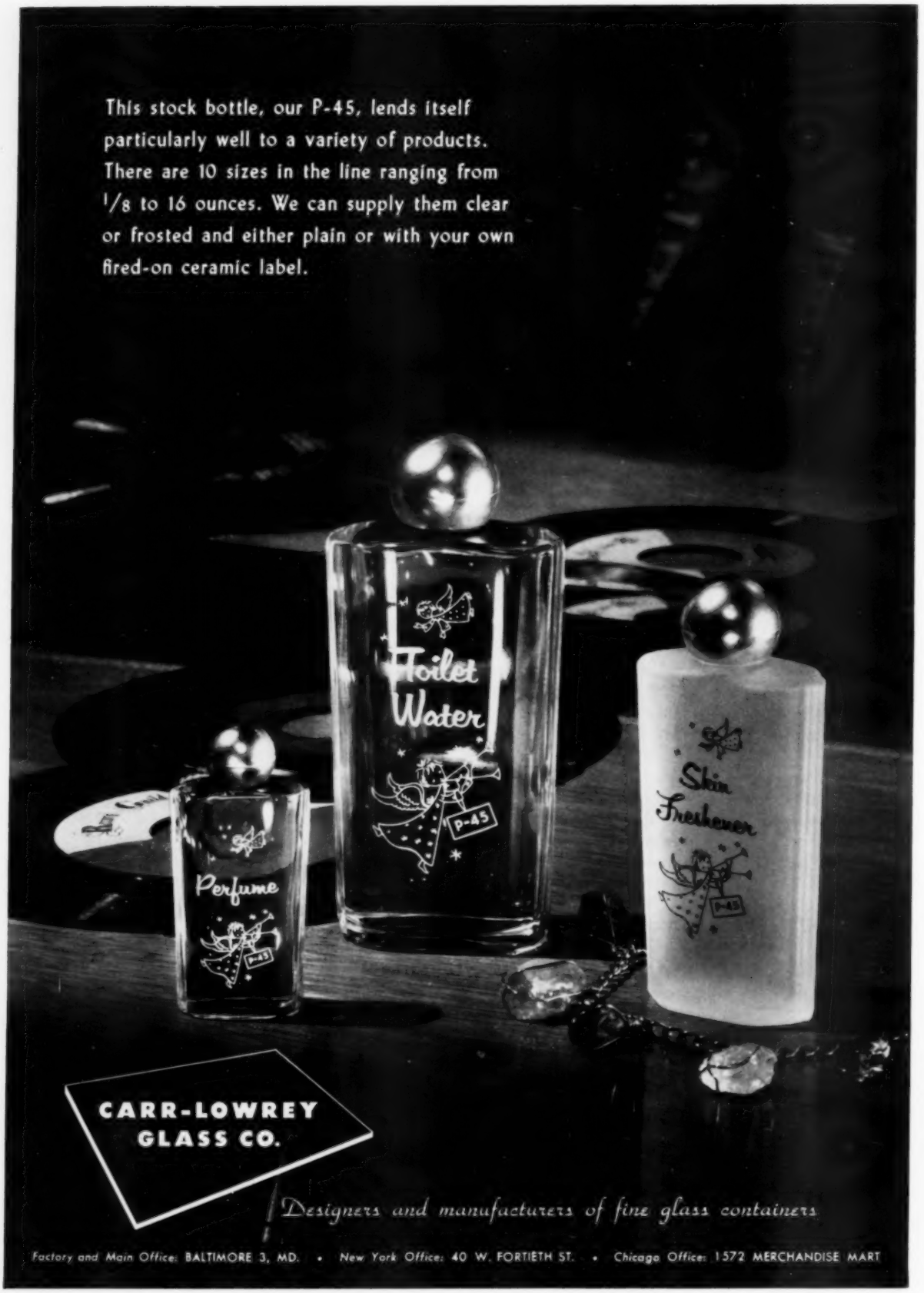
The number of stores in which the potential for an individual cosmetic manufacturer is sufficient to justify his placing his own sales girl there is really very limited. To achieve any real volume of sales and profits he needs thousands of additional outlets. But the more widely he distributes his line, the weaker becomes the retail selling support. This is because: (1) the ratio of sales clerks to customers has been, and still is, rapidly declining; (2) most cosmetic shopping occurs in only a few of the stores' total open hours so that during these peak periods the clerks are too busy to answer customer questions; and (3) cosmetics are increasingly being merchandised on a strictly self-selection basis.

Here are some of the relevant figures. While in the past four years the number of sales personnel has dropped seven per cent, the number of customers to be served by this diminishing number of sales clerks has increased nine per cent. Although department stores are the most reluctant to adopt widespread self-selection, they are now offering about 54 per cent of their items on an admitted self-selection basis. Because they haven't enough clerks to serve customers in periods of peak traffic when the opportunity for making sales is greatest, they also offer an appreciable additional percentage on what *actually amounts to a self-selection basis.* And of course we know that the proportion of goods offered via self-selection in drug stores is in many cases now running around 70 per cent, and is gaining every month. In short, as a cosmetic manufacturer's distribution expands, selling support for his line becomes proportionally diluted.

The Manufacturer's Best Out

Let's face the facts. There is no completely satisfactory substitute for a thoroughly trained, sincerely enthusiastic retail cosmetic sales girl. Stores can't replace her magnetic, personal enthusiasm because they can't replace *her*. Not today, they can't. Not in sufficient numbers to do you cosmetic manufacturers any real good. For practical merchandising men are generally agreed that never in the entire history of retailing has the balifer of the sales personnel available for retail employment been so low. But while no completely satisfactory substitute for the trained sales girl is available, there *is* a way to make your package do—well, two-thirds of the job good sales girls would do for you if they were available in large numbers. There *is* a way to give factual answers to the questions that pop into the customer's mind as she lifts your bottle of hand lotion off the counter and examines it. Simply

(Continued on page 114)


This stock bottle, our P-45, lends itself particularly well to a variety of products. There are 10 sizes in the line ranging from 1/8 to 16 ounces. We can supply them clear or frosted and either plain or with your own fired-on ceramic label.
Toilet Water
P-45
Perfume
P-45
Skin Freshener
P-45
CARR-LOWREY GLASS CO.
Designers and manufacturers of fine glass containers
Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: 1572 MERCHANDISE MART

Selecting a closure

by Frank S. Child

All cosmetic manufacturers undoubtedly realize the vast importance of the cosmetic bottle as a selling aid, judging from the attention they give its design. Yet, although they package their products in fine-looking containers, some of these manufacturers fail to recognize the absolute need of an appropriate closure. Indeed, they may spend large sums of money on a new product, design a scintillating package for that item, and then endanger the entire line, risking its success, by using the wrong type of liner.

Closure manufacturers report that cosmetic companies frequently contact them at the last minute, asking for immediate delivery on thousands of caps for a new product they have been developing over a 10-month, or longer, period. They just don't seem to realize the importance of the numerous kinds of liners and all the research that must go into their selection, say the cap people, who further states that it takes much time to determine the cap requirements for cosmetics containing new ingredients.

Members of the cosmetic industry have for many years been using some of the fanciest and most exotic-appearing bottles that are made, since these special bottle designs and motifs serve a very important function in the over-all cosmetic sales picture. But what good is the best cosmetic in the world if it is packaged so that it evaporates, or leaks out of the bottle during shipment, or reacts chemically with the liner, causing it to change color or become contaminated?

Those smaller cosmetic houses which overlook the importance of the closure and devote all their attention to the container are inviting trouble, because, as one cap maker declares, there are at least five ways in which a faulty closure can ruin that product's sales appeal.

1. Through leakage.
2. Through evaporation.
3. Through spoilage owing to entrance of air into the bottle.
4. As a result of tampering, with possible contamination or loss of the product.
5. Through chemical reaction between the product and the liner.

To avoid these pitfalls, the offending cosmetic firms should make a thorough study of their cap requirements before selecting a closure, or give the cap manufacturer enough time to make that study for them.

The closure is actually a rigid shell made of metal or plastic whose purpose is to press a liner against the lip of a bottle, sealing the contents within, thereby preventing any deterioration or loss.

The liner usually has two parts, the facing, which comes in direct contact with the product, and the backing. The backing is made of a resilient material like cork, which acts as a cushion between the rigid cap and the bottle lip. The very fact that this material is resilient is an added protection, for while constantly pressing upwards against the screwed-on cap, the liner keeps the cap tight and makes it less able to jiggle loose. It also enables the purchaser to unscrew the cap and replace it without applying an undue amount of pressure.

(Continued on page 57)

#1

Non-rolling, extra-depth, Bakelite cap; thick-flange rubber bulb; Saftee-ball glass.

#3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.

#4

Metal cap; oil - resistant AMEKINE synthetic rubber bulb; blunt glass.

New Modernistic bottle. Designed to lie flat for convenient labeling. Oval front provides ample label space.

New Perfection

DROPPING PARTS

Simplify Your Packaging Problem

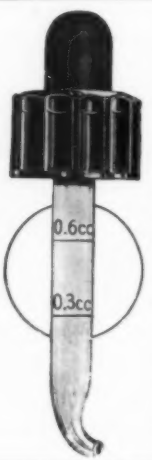
The wide variety of sizes, styles and colors in New Perfection's complete line of dropping parts offers the answer to your packaging problem. Each component part is designed to present and administer your product in the most attractive, convenient manner. We supply dropping parts to fit your bottles or furnish the complete unit.

DROPPER GLASSES CAN BE

CALIBRATED

IN COLOR

An inexpensive extra that adds great convenience to the use of your preparation. The dosage you desire in the color you specify is accurately and permanently printed on the dropper glass. Trade-marks and firm names can also be imprinted.



#2

Non-rolling, extra-depth Bakelite cap; thick-flange rubber bulb; special bent glass, plain or CALIBRATED.

RUBBER BULBS are supplied in many styles and colors. Oil-resisting AMEKINE synthetic rubber is used for oil preparations; natural rubber is supplied for other products.

CAPS of plastic or metal can be furnished in a complete range of sizes and colors.

DROPPER GLASSES are available in a wide variety of styles and sizes; plain or CALIBRATED in any color to mark specific dosages.

BOTTLES in an attractive modernistic style in Amber, Blue, Green or Clear glass are available, with dropping parts, in the following sizes: ⅛, ¼, ½, 1 and 2 oz.

Write for Samples and Quotations

PENNSYLVANIA
GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

Much trouble can result from using a liner which will react chemically with the product, and a great deal of study should go into this particular detail. Various solvents used in nail polishes and other cosmetic preparations, like acetone, are known to attack certain liners. As companies introduce cosmetics with new ingredients, they are finding it necessary to make additional compatibility studies before being sure that these products and certain liners can contact each other without a chemical interaction.

Sometimes the vapors from the product will penetrate the liner, or be absorbed by it. When this penetration occurs, the vapor will then go through the facing of the liner to the backing, attack that, and cause it to disintegrate. The cap will loosen and, if in transit, the product will either leak out, or evaporate, or both. Perhaps this reaction may take a longer time and not become evident until the package is sitting on the retailer's shelf. Or, it might be that after she has it on her dressing table for several weeks, the customer will find the liner sticking to the bottle, so when it is pried loose bits of the facing will drop into the bottle.

All this can be prevented by studying the cap requirements before marketing the product, rather than afterwards.

One cap manufacturer remarked on the experience of two companies in the pharmaceutical field which made similar cough syrups. Both formulas were virtually the same, except that the second one contained a little chloroform as a preservative. In each case, vinylite liners were used. The second manufacturer suffered a loss because, since chloroform attacks vinylite, the liner disintegrated, flaked into the cough syrup and discolored it.

In the normal process of manufacturing, some liners may be produced which are of uneven thickness. The difference, while probably not visible to the unaided eye, could cause the cap to push one edge of the liner down tightly and leave the thinner portion loose. Or the glass around the lip of the bottle might shrink unevenly during the cooling process, resulting in a poorly fitting cap. One other possibility is the appearance of fine crevices in the top of the glass bottle which might also permit leakage.

All of these conditions, of course, occur very rarely; however, when they do crop up they are most unexpected and unavoidable, insofar as human error is concerned. Manufacturers have devised additional safeguards for sealing bottles as extra insurance against these artifacts, for it takes only one leaky bottle, with a smeared label, to spoil the appearance of an entire line displayed on the drug store or supermarket shelf.

Ferdinand Gutmann, Brooklyn, N. Y., developed a Filmaseal over 20 years ago, principally to seal the product in the bottle securely and independently of the cap and liner. This Filmaseal is a variety of layers consisting of foils, paper, plastics, or other materials which are cemented together in one piece as a thin, air-tight disk. It is glued to the lip of the bottle after the bottle has been filled in the production line and so prevents the product from leaking or escaping in any way. Great care must be taken in choosing the correct laminations for the seal, in order to prevent a chemical reaction from occurring with the cosmetic inside. The cement between the laminations serves as an additional protective barrier.

Bottlers use several devices to apply similar seals which were developed subsequently. Gutmann designs its Filmaseal just a little larger than the inside diameter of the cap, so that it buckles around the inside circumference when inserted in the closure and is held firmly in place. Other companies fasten their disk seals with a small amount of cement to the center of the liner prior to the capping process. Later, in the bottle capping production line, the lip of the bottle is covered with a cement of higher holding power so that when the cap is screwed onto the bottle, the disk is pressed against the glass where it is held firmly in position.

When the customer unscrews the cap at a later date, the seal is stuck tight to the bottle and no longer fastened to the liner.

Sometimes it is too difficult to design a disk seal that will be completely resistant to all the ingredients in a

(Continued on page 114)

Beautifies! Protects! Sells!

...quality packaging by

SHELLMAR-BETNER

With so many exciting products to choose from, does your customer reach for your brand? She does, if it's attractively packaged, if she knows that your product will stay fresh and keep its high potency value. A package by Shellmar-Betner gives her that assurance.

At Shellmar-Betner we've had years of experience in drug and cosmetic merchandising, package design and quality printing. Our designers work with foil, acetate, polyethylene, vinyl—in fact, every type of flexible lamination. They are skilled in flexographic and gravure printing, too. And the tougher the job, the better they like it.

So remember the name, Shellmar-Betner. Call us to talk over your packaging problems.

Our Fiftieth Year of Tailor-Made Packaging

CONTINENTAL CAN COMPANY

SHELLMAR-BETNER

FLEXIBLE PACKAGING DIVISION

MT. VERNON, OHIO

Sales Offices in Principal Cities

Packaging and Selling

Neilson Report

The Neilson Report on retail drug and proprietary store sales for 1954 has just been issued. Here are some extracts from that report.

Sales of all retail drug and proprietary stores, during 1954, came closer than ever before to the five billion dollar mark. Annual volume for these outlets was within two per cent of that record figure, and expectations for reaching it during 1955 are now considered excellent.

During this period, independent drug stores held their own with no appreciable change in actual sales in comparison with chain outlets. The chain drug stores did 1.5 per cent more business than the previous year and their total sales for 1955 should run very close to the billion dollar mark. Independent drug stores increased their sales .01 per cent and their sales were within reach of four billion dollars.

Sales of health and beauty aids in food stores continue their growth, according to this drug and food index surveys. This applies even to some of the slower-moving products of this trade. An outstanding example is the home permanent wave set, which in 1946 was stocked by only two per cent of all food stores, a mere 8,000 outlets. But in 1954, these items were to be found in slightly less than 50 per cent of all food stores, or approximately 175,000 outlets. This means that although the individual drug store still sold more wave set than did each food store, the weight of distribution is with the grocery stores where three times as many stores were handling the wave set.

Here are some figures of the distribution of drug and toilet article items in food stores.

Product	No. of Food Stores Stocking
Headache Remedies	346,000
Dentifrices	338,000
Shampoos	330,000
Laxatives	315,000
Shaving Creams	299,000
Cold Remedies	299,000
Mouth Washes	272,000
Hair Tonics	264,000
Hand Lotions	264,000
Deodorants	245,000
After-Shave Lotions	214,000
Permanent Wave Sets	175,000

This means that for a significant number of the utility products of this industry the grocery store has from three to seven times as many chances to get the business on the basis of the number of stores and many times that figure on the basis of traffic and the frequency of visiting the store. The arithmetic of shopping is certainly giving the grocery store a formidable advantage to certain products in our trade.

In a study of ten drug commodity lines by territories, there did not appear to be much variation in the food versus drug store by territories. The colossal weight of display impact in the grocery store is, however, more and more making itself felt. Among these ten of the most widely used household drug items all are approaching the 50 per cent sales mark in grocery stores nationally and have exceeded the 50 per cent mark in three of the seven territorial districts of the country.

We were already to launch a ten-million dollar television campaign on our wonderful new liquid rouge with our wonderful new name, "STUN," when our human behavior studies showed that everybody on television spells trade names backwards.

It is interesting to notice a comparison between the larger independents and the chains in that these large independents average, in annual sales, $106,800 per 1,000 square feet of selling space as compared to $104,400 for the chains. This seems to us rather startling, in that the chain store averages a location of denser population and a more thoroughly organization for per-average-store for promotional items and promotional sales drives.

A particularly interesting point in this survey is the growing acceptance by retail druggists for new products and the growing part of the annual volume which these new products make up. For instance, the dollar share of new products sales of established annual sales in drug stores in 1950 was seven per cent. In 1951, this was 14 per cent, in 1952, 22 per cent, in 1953, 30 per cent, and in 1954, 35 per cent. This certainly shows that new products find a ready acceptance from a public accustomed to constant changes and improvements and it shows the wide opening of the retailer to a new product which has potential for consumer appeal.

Sales of the larger sized package are increasing and people who are accustomed to buying large sizes usually seem to buy them in drug stores.

As an indication that the druggist must have other departments than drugs in order to perform a public service a statement here says: "If every drug store threw out every type of merchandise except ethical and pharmaceutical items and depended solely on prescriptions and accessories for a living, there would be only a fourth or fifth as many drug outlets in existence. This would mean only one drug store in every three hundred square miles.

Profit in Cosmetics

In most parts of the country, department store sales of toilet articles have not only shown a slight proportional gain over other retail outlets, excepting super markets, but have been showing a highly favorable profit position for the department store.

In a particular survey which we have on hand, toilet articles did three per cent of department store's business. These were for a group of department stores, each of which totalled over ten million dollars in annual sales.

This compares with a percentage of the total store's yearly sales of 2.7 per cent, in another and considerable broader survey.

It is interesting to note that this three per cent of total store sales puts the toilet goods department among the top rank of all departments in the store.

Again, in a survey of profits for the fourth quarter, the toilet articles department produced 7.5 per cent of all profits. This was exceeded by only one department in the store, that is, men's furnishings, which did 7.8 per cent.

Small Business

It doesn't look too good for small business, according to the New York State Society of Certified Public Accountants. In a recent meeting, 22 per cent of the accountants thought that small business would continue about as before but 70 per cent believed small business conditions would not be as favorable as they are now. In spite of all the tongue in cheek speeches by the government and others, modern society in America is unquestionably ganging up on small business. If we take the Government's definition of small business, that is any enterprise which does less than five million dollars in annual sales, it is easy enough to see how one field of endeavor after another is being shut out to small business or at least to the formulation of new small businesses.

In most industrial enterprises today, the amount of capital investment necessary for factory and equipment is making it increasingly difficult for new small businesses to start. In the age of automation which we are entering, these obstacles will be materially intensified. In the field of consumer goods, big business has found a dominating control of their position through mass consumer advertising. The development of radio and particularly television has increased this advantage to big business. When today the sum of ten million dollars can be invested in advertising during a year for one product, such as a lipstick, and when another single product, such as tooth paste, can sustain a twenty million dollar annual expenditure for advertising, it is easy to see the increasingly narrow opportunity offered to the small company with small capital.

Plenty Lipsticks

In a recent promotion Rich's the famous Atlanta department store, boasted that they had "more than enough lipsticks to paint a line down Atlanta's Expressway." This theme was shown in a full-page newspaper advertisement which contained a vivid serpentine streak of bright red on the black and white illustration of the local highway. The copy continued, "That is how many lipsticks you have to choose from anytime you walk into Rich's . . . 10,899, all yours in Rich's fabulous world of beauty."

Over Distribution

Quite a few industries are beginning to face up to a problem of over-distribution. At least some of the business leaders in these industries are publicly discussing this problem.

Justly recently, a leading toy manufacturer expressed his concern over the department store and its place in the structure of toy distribution. The department store maintains a permanent and a costly toy department. A majority of retail toy sales throughout the year and during the dull months leading up to the Christmas Season is done by the department store. And yet, when the Christmas Season comes and the department store has its real opportunity to make a substantial profit from toys and to pay for some of the losses of the dull months, many people in the toy industry open up literally thousands of accounts in stationery stores, grocery stores, pineboard stores, Farmers' Markets, etc. These latter stores are not basically toy merchants; they contribute no real toy selling to the industry, they have no desire to build up a toy clientele; they simply want to skim the cream from this one brief period of high toy sales. This manufacturer then asks the very pertinent question: "What would happen to the toy industry if the department store decided to make toys just a seasonal operation?

Super-Sales

The Consolidated Consumer Analysis for 1955 which covers the twenty major metropolitan markets has just been issued. This covers a consumer survey for the major drug and cosmetic products in these markets. The purchase of toilet articles in grocery stores varies substantially in some of these cities. For instance, in Cincinnati, in 1951, 75.8 per cent of the people purchased some of these articles in grocery stores compared to 64.3 per cent in 1954. In Indianapolis these figures were 61.3 per cent compared to 54.2 per cent; in Milwaukee 53 per cent compared to 45.7 per cent; in St. Paul 50.2 per cent compared to 44.1 per cent; in Omaha 62.5 per cent compared to 43.6; in Portland, Oregon, 54.5 per cent compared to 49.6; in Long Beach, California, 50.2 per cent, compared to 55.9 per cent. On the other hand, there were several cities where there appeared to be a decline in sales in the super market

Plastic Bottles *by Continental*

are designed to appeal

Whether your product is sprayed, sprinkled or poured . . . or whether you sell convenient plastic containers directly to the consumer, it will pay you to investigate Continental plastic bottles. They're unbreakable . . . can be squeezable if you like. They can be made in most any shape and size. As for colors — the rainbow's the limit.

It may be that you'll find just what you need among Continental's stock sizes and shapes. In any case, you'll find that Continental research and engineering people, and designers, too, have a lot of new ideas for increasing appeal with plastic bottles. Why not let them help you?

CONTINENTAL CAN COMPANY

Our Fiftieth Year of Tailor-Made Packaging

MILLSPLASTIC DIVISION

135 SOUTH LA SALLE STREET • CHICAGO 3, ILLINOIS

Spot Announcements

Spot announcements on television are not the only visual announcements that consumers see. Every Hazel-Atlas glass package is planned as a visual announcement of the goodness of your product, and what's more, it's a spot announcement on the spot. Beautiful Hazel-Atlas closures top your selling effort.

Point of Purchase Display

IS BUILT INTO EVERY H-A GLASS CONTAINER

HAZEL-ATLAS GLASS COMPANY, *WHEELING, W. V*

for the products of this trade. For instance, in Salt Lake City, in 1955 the number of people shopping in the super-market were 57.7 per cent as compared to 58.2 per cent in 1954; in Seattle, the comparison was 50.1 per cent as against 55.6 per cent; in Sacramento 61.1 per cent as compared to 67.4 per cent; in Fresno 54.3 per cent, compared to 57.6 per cent; in Modesto, 61.7 per cent as compared to 69.3 per cent, and in Honolulu, 68.5 per cent compared to 71.7 per cent.

It is interesting to note that these declines in favor of the super-market even though slight, seem to be largely concentrated in the very territory where the super-market first made its explosive entry into this industry.

Lolly Boom

The therapeutic effects of Lolly Pops were testified to by Abe Josephsohn, President of the National Confectionery Salesmen's Association.

"In my thirty-eight year candy-selling career," he said, "never have I witnessed such an unparalleled concentrated interest in a confection which is now rendering beneficial service of inestimable value. Lolly Pops, recognized for their capacity to soothe tense, bewildered youngsters, have by this service earned a niche in mankind's Hall of Fame."

The Lolly Pop boom so referred to is the many millions of this confection that have been issued to children nationally in conjunction with the anti-polio injection.

Get in First

Speed in advertising and the mobilization of a heavy consumer campaign is often required by a new technical development which gives a major competitive advantage but which may soon be available to all competitors. In a recent record-breaking time limit for advertising, Ready-to-Bake Foods of Los Angeles came up with a new packaging development for their "Puffin Biscuits," that is a new triple sealed inner wrap that the company regarded as a definite sales plus in their toughly competitive field.

On April 1st, the advertising agency was contacted and on the eighth working day of April 12th, advertising plates were shipped out to catch scheduled insertions.

Fair Trade

Fred B. Lazarus, President of Federated Department Stores, which includes such giants as Abraham & Straus, Bloomingdale's, Filene's, P. & R. Lazarus, Foley's and 11 others, was asked recently whether he thought fair trade was enforceable. He replied from his chair, "I don't even have to get up to say 'no.'"

It has always struck us as rather curious that many leaders in the department store field, including the heads of such dominant retailers, including of course and always, Macy's, have been so vigorously opposed fair trade. These are the stores that rarely make more than two per cent profit on sales and rarely operate with an overhead under 38 per cent of sales. These are the stores that are certainly the most extravagant and lavish in promotions, decorations, air conditioning, escalators, personal selling, credit and deliveries and almost everything a retailer could think up to add to his overhead.

Because of this attitude of the high cost department store, it is a little difficult for us to see why so many people are claiming that the disappearance of fair trade will threaten the existence of the momma and poppa store.

This Wonderful Country

A housing expert recently remarked that you had to pay cash for a bag of peanuts but that you could buy a $14,000 home without even putting up a penny.

We have had the idea that Secretary Benson is a pretty energetic individual and it is about time that somebody called his attention to the way in which another Government Bureau has pulled a fast one on him.

Changing Distribution

The pressure for lower cost distribution is continuing to grow in this country. Mass production, the essential basis of prosperity in this country, has always required mass consumption. The rigid framework of mass distribution which has stood in the middle between production and consumption is losing some of its rigidity in a rather remarkable variety of ways.

It is generally believed that the grocery supermarket inaugurated a new era of low cost mass distribution. But it would seem that the grocery super-market has become rigid and may be in itself simply in a transition period.

In some parts of the country, super market operators are beginning to worry about the dynamic growth of the still lower-cost Farmers Markets and these in turn are feeling the competition of those roadside stands which are moving into fairly complete lines of food products.

Most widespread of all drives against the high cost of distribution is of course the discounter. There has been a lot of Pollyanna belief that the discounter is a temporary phase as was the pineboard store 20 years ago. There are indications, however, that the discounter may become a permanent and respectable part of our distribution system because in many cases the discounter is proving in a legitimate way that they can operate at a lower cost and pass this on to the consumer.

Henry Modell Company, Inc., a chain operator of military surplus merchandise, is opening up a discount shop center on Long Island. Fifty thousand square feet for a rental of over $2,000,000 over the 21 year period of the lease has been contracted for and about 70 other operators will sublet. It has also been reported that Crawford Clothes, Inc. a 45 year old clothing chain of 76 units, would enter the "discount selling" field. Joseph Crawford Levy, President, said that his firm was eliminating "Unnecessary retailing frills and cutting costs to the bone."

Most drastic threat of all to the rigid structure of high retailing costs is an energetic Swiss called Gottlieb Duttweiler, the President of the Federation of Migrous Cooperatives which last year did a business of 90 million dollars in 300 retail stores in Switzerland.

The average retail markup in these stores, some of which are mobile, is eight per cent. Mr. Duttweiler is opening units in Turkey and has recently been invited to Puerto Rico.

It has been stated many times before that the savings which would have been passed on to the public each year by lower production costs have been absorbed by steadily increasing distribution costs. Up to now, this has been a frequent observation but not a great deal has been done about it because of the rigidity which has frozen so much of our retail structure. How long this rigidity can be maintained under the stresses and strains arising out of so many different methods of retailing would be a question that will have to be answered not only by retailers and manufacturers but by the public and by a change in legislation.

Cosmetic Phenomenon

What could probably be called a cosmetic phenomenon is illustrated in the current annual report of Avon Products, Inc. To sustain the use of this word "phenomena," we merely quote two paragraphs from this report:

"Consolidated Net Sales for the first quarter amounted to $12,826,978, an increase of 21.9 per cent over net sales of $10,524,986 for the first three months of 1954.

"Consolidated income before taxes amounted to $2,193,560, an increase of 61.2 per cent over consolidated income of $1,360,390.00 for the first quarter of 1954.

"Consolidated net earnings after taxes amounted to $1,048,242 in the first quarter of 1955, an increase of 52.1 per cent over the $689,223 earned in the corresponding months of 1954.

Room for Small Plastic Molders

At its recent convention, members of the Society of the Plastic Industry were told that the relatively small investment of $10,000 for two vacuum forming plastics machines can put a man into that business. This $10,000 would cover the purchase of a standard-sized press and a small one for development and experimental work. These machines can be handled manually or automatically by personnel without special skills or intensive training.

This looks like plenty of competition in vacuum moulding products.

Vacuum moulding is now in competition with such other processes as injection and compression moulding, extrusion and low pressure moulding.

Chemical Achievements

During Chemical Progress Week, members of a panel were asked to select the ten chemical developments which, during the past thirty-five years, "Have meant the most to the American consumer."

Twenty-seven chemical achievements were mentioned but here are the top ten:

1. Antibiotics
2. Man-made fibers
3. Plastics
4. Man-made rubber
5. Feed supplements
6. Insecticides
7. Improved Fuels
8. Synthetic Fertilizers
9. Radioactive Isotopes
10. Packaging films.

Sales Variation

Cosmetic sales do not show such a major seasonal variation as many people believe. Here is a report of sales by months for a major group of department stores in their cosmetic department.

Percentage of Year's Sales Made in Each Month

Jan.	Feb.	Mar.	April	May	June
6.8	6.4	6.8	7.3	7.7	7.7
July	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**
6.7	6.6	7.3	7.5	8.9	20.3

Is It a Warning?

Candy eating in the United States is declining, partly because the "little store around the corner" is being superseded by the modern super-market. The per capita candy consumption last year was 16.9 lbs. In 1944, it was 20 lbs. a person. These statements by the head of a leading candy company at the recent Convention of the National Confectioners Association points up something that may have to be faced some day by this industry, that is—will self-service or more properly "take it or leave it" selling be able to sustain the same volume of retail sales as personal selling has done in the past. In other words, as this industry forget more and more into a marketing formula where the entire burden of selling to the consumer is delegated to consumer advertising and the retailer simply makes it accessible and available to the consumer, can this do as good a job for the industry as does traditional distribution through department stores, independens and chain drug stores where personal selling prevails?

Needed Nutritive Supplements

Stating that cows eat better than human beings, Dr. William Coda Martin, National Vice President of the American Academy of Nutrition, also said that Americans who believe they are the best fed people on earth are fooling themselves. According to Dr. Martin, this may be true in quantity but it is not true in quality or selection.

A basic reason is the loss of many trace minerals from a large part of the soil producing grain and vegetables for human consumption. For instance, in the past ten years, the protein content of corn has been allowed to fall from 9.5 to 8.5 per cent.

According to Dr. Martin, this deficiency in many of our foods may help account for the increasing degenerative diseases of old age affecting the heart, kidneys, liver, arteries and bones.

There has been a little literature in recent years about the variation in nutritive content of food at the farm level because of the variation in soils and localities. There has also been some suggestion, which has not received anywhere near the degree of study, research and publicity which it would seem this subject merits, that these basic deficiencies of natural foods may be creating a serious national problem in nutrition.

Pending a much broader field of knowledge in this direction, which could take years to correct, it would seem that there may be an opening for the pharmaceutical industry here in nutritive supplements over and beyond anything that is on the market today.

General Chemical Presents

The Amazing Story of Aerosols

...See This Dramatic Full-Color Sound-Slide Film in Your Own Office or Plant

Here is the complete story of aerosols and the growth of a great new American industry dramatically told in full color on sound-slide film. It's available free of charge for showing in your own office or plant.

"Push-Button Living" covers the development of aerosols from the first "bug bomb" to today's production of nearly 200,000,000 units covering 85 different types of self-spray products.

Your company's top management, research personnel, production heads—in fact, everyone interested in making or marketing aerosols—all will want to see this fact-filled film. Step by step it covers fully what aerosols are, how they are made and work. And, it shows how competent contract fillers make it possible for your company to enter this fast-growing field without investment in plant or equipment.

For Free Showing of "Push-Button Living" at your office or plant, just call the General Chemical office that serves you, or send coupon today.

The Story of Aerosols and the Growth of a Great, New Industry

Aerosols Popularity in the Home

Heart of the Aerosol—"Genetron" Propellants

The Role of the Contract Filler

The Continuous Search for New and Better Products

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Producers of

genetron®
PROPELLANTS

...the right propellant for every aerosol need.

GC
Allied Chemical

"Genetron" Department
GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Without cost or obligation to us, we would like a showing of the new General Chemical film, "Push-Button Living—The Story of Aerosols and the Growth of a Great, New Industry," at our

____ office ____ plant.

Name _____ Position _____

Company _____

Address _____

City _____ Zone _____ State _____

DC-7

Packaging Group Visits Nosco Plastics

Members of the Drug and Pharmaceutical Committee, Packaging Institute, visited Nosco Plastics Inc., Erie, Penna., on June 16 and 17, in order to study its different methods of plastics manufacture and the application of these methods to the drug industry.

J. R Driver, Jr., of the Dow Chemical Co., addressed the group, during the morning of June 17, discussing the market trends of polystyrene and other plastic packages in the drug and pharmaceutical industry, while J. Struthers, a technical service representative of the company, talked on the properties and limitations of polystyrene and other plastic materials as they pertain to packages in this industry.

Later on, John K. Honish, of the Bakelite Co., gave an illustrated talk on the market trends of polyethylene and mineral-filled phenolics, also, in regard to the pharmaceutical industry.

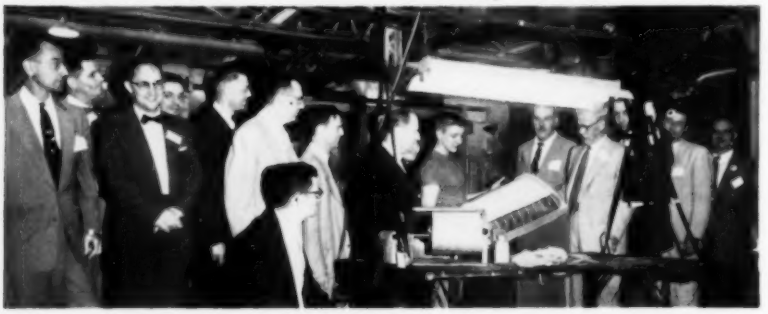
Those committee members who attended the two-day visit were R. G. Crozier, Abbott Laboratories; Wm. Schmidt, Bristol Laboratories; L. H. Zahn, Ciba Pharmaceutical Products, Inc.; C. Burnside, Eli Lilly & Co.; R. H. Herbine, Strong-Cobb, Inc.; O. P. Norris, Winthrop - Stearns, Inc.; P. Geary, Smith, Kline & French Laboratories; R. J. Hennessy, Lederle Laboratories; D. M. Ashkenaz, Wyeth Laboratories; H. E. Nack and G. Robinson, Sharp & Dohme, Inc.; A. R. Schettel, E. R. Squibb & Sons; J. Walls, Rexall Drug Co.; and C. Spannello, Schering Corp.

M. E. Duellman, S. E. Massengill Co., and F. S. Child, DRUG & COSMETIC INDUSTRY, were present as guests of the Drug & Pharmaceutical Committee.

Hosts during the two-day affair were Harry H. Kugel, president, Nosco Plastics; Harold Cloyd, vice-president and chief engineer; and Fred Obercherker and Edward J. Lockwood, sales engineers.

This committee meets periodically during the year at different manufacturing plants throughout the United States so it can keep abreast of all the latest developments in every phase of packaging. By these frequent visits, this long-established packaging group is constantly striving to gain information on the best packaging materials and the best testing methods, in order to guarantee complete product protection and help promote consumer acceptance.

Drug & Pharmaceutical Committee members watching plastic molding operation at Nosco Plastics, Inc., during their trip to Erie, Penna., last month. Part of group is, left to right, A. R. Schettel, E. R. Equibb & Sons; R. Crozier, Abbott Labs.; M. Duellman, S. E. Massengill; C. Spannello, Schering Corp.; W. Schmidt, Bristol Labs.; C. Burnside, Eli Lilly & Co., vice-chairman; P. Geary, Smith, Kline & French Labs.; L. H. Zahn, Ciba Pharmaceutical Products, Inc., chairman; D. Ashkenaz, Wyeth Labs.; R. Hennessy, Lederle Labs.; E. Nack, Sharp & Dohme, Inc.; O. P. Norris, Winthrop-Stearns, Inc.; G. Robinson, Sharp & Dohme; and R. H. Herbine, Strong, Cobb & Co.



Libson Heads Calif. Packaging Club

Philip Libson, Max Factor & Co., was recently installed as the first president of the California Packaging Club which was organized in Los Angeles several months ago. Additional officers are Robert C. Langsett, Armstrong Cork Co., vice-president; Irl J. Korsen, Eureka Press, secretary; and William Nensteil, Robert Gair Co., Inc., treasurer. Tom Sheffield, Sheffield Tube Co., is chairman of the entertainment committee and J. Merrill Bittner, Crown Cork & Seal Co., chairman of the membership committee.

PHILIP LIBSON

Doin's ... NEWS IN PACKAGING

Give Talks at PDC

A. J. Wood, president of the market research firm, A. J. Wood & Co., and Robert D. Harper, associate professor of marketing at New York University, addressed the Package Designers Council on June 23 at a dinner meeting, Sheraton-Russell Hotel, New York.

White Rain Family Package

The Toni Co., a division of the Gillette Co., is now packaging its "White Rain by Toni" lotion shampoo in a family of cartons designed and made by the Chicago plant of Robert Gair Co. The packages tie in with the product's advertisements, as the design on the package shows a girl with umbrella

There's a PLAX Package with the ideal SHAPE for boosting your sales figures

Flexible by nature, Plax bottles make it easy for you to merchandise your product in graceful, functional contours . . . our wide range of stock shapes makes it economical, too. In addition you get a lightweight, unbreakable package that can save you hundreds of thousands of dollars in shipping costs . . . that affords a rainbow choice of colors . . . and the ideal dispensing method, whether it's a spray, drop-by-drop, controlled pouring or direct application. Consult Plax for the best in convenience packaging.

PLAX CORPORATION

P. O. Box 1019, HARTFORD, CONNECTICUT

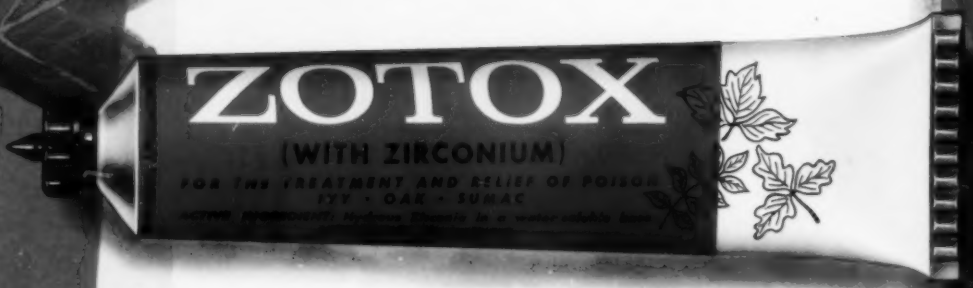
IN CANADA: Plax Canada, Ltd., Montreal and Toronto

PLAX

In plastic bottle packaging, only Plax offers continuous research, complete design service, and long experience.

SHEFFIELD TUBES

package for a revolutionary poison-plant remedy



ZOTOX, product of Zotox Pharmacal Company, Inc., Stamford, Conn., chemically neutralizes the violent poisons — poison ivy, oak, sumac. It removes excess poison, and prevents its spreading . . . offering blessed relief! So effective is Zotox with Zirconium that, in most cases, it actually prevents inflammation when applied up to one hour after contact.

SHEFFIELD PROCESS TUBES . . . the safer, tougher tubes . . . are here again chosen as the ideal package. During more than three generations of service to the pharmaceutical industry, Sheffield Tube has been constantly associated with those who contribute significant advances in treatment of pain and disease.

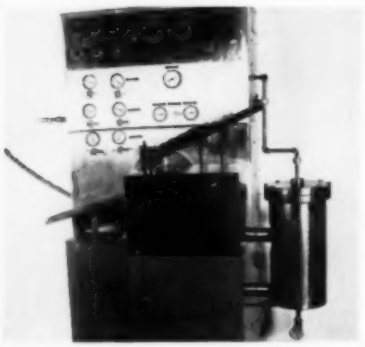
THE SHEFFIELD TUBE CORPORATION
Factory and Home Office: New London, Connecticut
Sales Offices: New York • Chicago • Los Angeles

and raincoat walking under greatly enlarged drops of rain. The carton is printed in light and dark blue on ACM clay-coated board.

The large, uncluttered design makes a display piece of the carton, as well as a package for the bottle. Detailed instructions for use are printed on the back.

New Pressure Packaging Machine

Glen M. Nelson, vice-president of the Paper Mate Co., and Thomas W. Boykin, Jr., consultant with Ruthrauff & Ryan, jointly own the sole selling rights for a new pressure packaging



machine designed to fill aerosol-type containers at the rate of 60 a minute with no prior refrigeration. Completely automatic, it will totally evacuate and fill and meter each container. The machine, manufactured in single units, will cost about $7,500. In quantities of 10 or more, the costs may be lowered to about $5,000 per machine and could be manufactured and tested within 60 to 90 days from the date of order.

Berni Expanding Package Service

Alan Berni & Associates, Inc. is expanding its Five-Point Package-Merchandising Service in order to help more consumer goods manufacturers reduce the margin of error in their self-selection merchandising, according to Alan Berni, president. This Service is a composite of research, merchandising strategy, an entire coordinated design program, advertising, and packaging engineering.

New Plastic Ribbons in Packaging

Rapid - Ribbon Corp., Croton - on - Hudson, N. Y., is selling a new type of stretchable plastic ribbons for special pre-packaging promotions. Rapid-Ribbons are said to be easier and quicker to apply than adhesives, and better to use, because they do not mar the package or the label when they are removed.

J. M. Gordon, a plastics engineer, who developed the elasticized plastic loop, is president of the Rapid-Ribbon firm.

The loops, made in numerous sizes and colors, cost as little as one cent each in quantities. They will stretch from 50 to 100 per cent and then recover to their original length.

POPAI Executive Committee

Walter J. Ash, Consolidated Lithographing Corp., has been named chairman of the executive committee of the Point-of-Purchase Advertising Institute, according to Donald S. Hutchinson, POPAI president, and vice-president of Lutz & Sheinkman.

Odor Prevention in Packages

The Barnebey-Cheney Co., Cassady at East 8th Ave., Columbus, Ohio, has developed DACOR-T tubes for the prevention of odor contamination or odor build-ups within packages and cartons in shipment or storage. The DACOR (Disposable Activated Charcoal Odor Remover) Tubes are 3/8″ in diameter, one to six inches long, and made of a porous, non-woven synthetic fabric filled with granular activated carbon.

The special charcoal adsorbs large quantities (up to half of its own weight) of the gases and vapors which constitute odors. Once adsorbed, these odors are not released.

The tubes and their uses are explained and described in a bulletin Form No. 170-255, available upon request from the company.

Giant Aerosol Can

The U. S. Packaging Corp. division of Bostwick Laboratories is bringing out a 16-ounce push-button can of Frosty Snow, said to be the largest can of its kind ever used by an aerosol company. The firm expects this to be a milestone in the pressurized-product field.

Armour & Co. has added two more sizes (1½ ounces and seven ounces) to its Dial Shampoo and restyled the package. All of the containers now have a close family identity with the distinctive Dial coral color on the plastic bottles.

Bourjois has a special mid-summer combination featuring Evening in Paris Dusting Powder and Toilet Water priced at $1.50.

Germaine Monteil has developed Super - 3 Liquid Cleanser, which cleanses deeply, gives moisture to the skin and removes the bacteria that are responsible for surface blemishes.

Massengill is distributing Neo Semhyten Capsules for the treatment of essential hypertension.

Max Factor has completed promotional plans for the September introduction of a new lipstick shade for Fall, 1955, called Red Tape.

Schering Corp. has prepared Chlor-Trimeton Repetabs, 12 mg., an antihistamine, for patients with more resistant allergies. They provide eight to 12 hours of uninterrupted relief throughout the day or night.

The company has also released Meticortelone, an anti-inflammatory and antirheumatic.

Sharp & Dohme has released Deltra Tablets, a new member of the company's extensive line of adrenocortical steroids. It is said to have greater anti-inflammatory therapeutic action than either cortisone or hydrocortisone.

E. R. Squibb & Sons is distributing Florinef-S for the treatment of dermatitis, neurodermatitis, eczema, sunburn and similar conditions. It is in lotion or ointment form.

Upjohn is marketing a new lotion form of Neo-Cortef, offering the anti-inflammatory agent, hydrocortisone, and the wide-range antibiotic, neomycin.

Zotox Pharmacal Co. is introducing its new Triocin ointment in a folding carton display designed and made by the Thames River (Conn.) division of Robert Gair Co.

The product which is used for the control of acne and pimples, is aimed at the teen-age market.

control's the thing...

WITH ANCHOR HOCKING, TOO

The mark of the tennis great is the steady *control* that keeps the ball in play, then smashes it out of reach for the winning point. And *control* is important, too, in the manufacture of Anchor Hocking quality products.

From the selection of all raw materials to the final production line inspection, Anchor Hocking employs literally hundreds of exacting *controls,* tests and checks involving many scientific testing devices. Although each factory maintains a laboratory of its own for quality control purposes, central laboratories at Lancaster, Ohio, serve as a control center for all—veritable watchdogs that make certain Anchor Hocking products comply with their rigid specifications.

Eleven strategically located factories and sales-service representatives in 25 principal cities in the U. S. and Canada await the opportunity to serve you with controlled high quality Anchor Hocking products.

Anchor® Metal and Molded Closures provide dependable, attractive and efficient seals—their uniformly high quality a result of exacting quality controls.

50th Anniversary

Samples of all incoming sealing gaskets for use in Anchor caps are subjected to fourteen different quality control tests before approval for production.

Coating thickness on metal plate is controlled to rigid standards. Here, film weight on a coated disc is checked on an analytical balance.

Anchor closures are conveyed through a tunnel where they are cleaned with forced air and vacuum prior to inspection and packing.

ANCHOR HOCKING

GLASS CORPORATION

GENERAL OFFICES — LANCASTER, OHIO

Anchorglass Containers, Anchor Metal and Plastic Closures, Anchor Sealing Machines, Cartons and Package Engineering Service... for Packers, Manufacturers, Bottlers of Foods, Drugs, Household Chemicals, Cosmetics, Toiletries, Beverages, Beers, Ales, Wines and Liquors.

Available plain, debossed, silk-screened or decorated with jewels. Goldcote caps shown come plain or jeweled. Other caps in various shapes and colors obtainable.

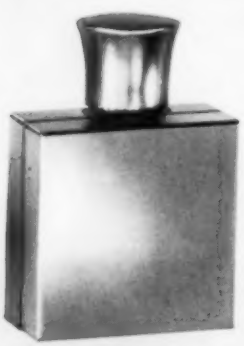
RICHFORD SPILLPROOF METAL ENCASED PERFUME FLACONS

Shaped for Sales!

Highly-Polished Brass, 1 dram Spillproofs in seven shapes — perfect for the purse — easy on the pocketbook. Write now for samples and prices.

No. 2201 Flat Oval

No. 2301 Bermuda



No. 2001 Square

No. 2251 Tall Oval

No. 2151 Tall Round

RICHFORD
CORPORATION
404 FOURTH AVENUE, NEW YORK 16, N. Y.

No. 2101 Watchcase

No. 2401 Nassau

ACTUAL SIZES SHOWN

Patent THOUGHTS AND TRENDS

*by Thomas Cifelli, Jr.**

PATENT ATTORNEY

Another Gillette Hair Waving Patent Issued

Gillette, which was one of the companies that succeeded in having Judge Kaufman invalidate the basic McDonough Patent, U. S. 2557710, now appears to be building up to a patent position of its own in the "cold permanent waving" field. In this connection it has received two patents within the last year: U. S. 2688972 and U.S. 2708940.

U. S. 2688972 was discussed in the October 1954 issue of This Journal. The central idea of that patent was to do away with the need of a so-called "neutralizer." The invention there, according to Alfred E. Brown, the inventor, stemmed from his discovery that it was not necessary to disrupt the disulphide linkages in the hair keratin and develop the wave at the same time. Brown found that it was possible to develop the wave as a second step following substantially complete arrestment of the chemical break-down action.

In the Brown process the reducing chemical was applied to the hair as before, but was left on the hair in full strength for substantially less time, seldom if ever for more than half of the time previously considered necessary for home waving. Then, before full development of the final wave, the solution was diluted in situ on the hair, which might be wound or curled either on rods or in a pin-curl configuration, the degree of dilution being such as to preclude further substantial reducing or chemical action on the hair. The hair, with the diluted solution thereon, was maintained on the curling rod or in the pin-curled configuration for a period of time sufficient to fully develop the wave and to insure substantially complete restoration of the normal disulphide linkages through aerial oxidation, the wound hair during this period being kept adequately open to the atmosphere. As the final step of the Brown process the hair was unwound and if not dry it was wrapped into pin curls for any desired style.

Brown's lotion had the following composition:

Ammonium Thioglycolate	**0.5 N**
Excess Ammonium Hydroxide	**0.5 N**
(Sufficient to give pH of 9.4)	
Wetting Agent	**0.3 per cent**

Now come two other Gillette inventors, Louis E. De Mytt and Agatha M. Hannigan, who attacked the problem of eliminating the "neutralizer" by changing the composition. As a matter of actual fact it is not correct to state that De Mytt and Hannigan are interested solely in eliminating the neutralizer as their patent apparently deals with hair waving methods which employ neutralizers as well as those which eliminate neutralizers. However, it is obvious that the preference is for the method involving elimination of the neutralizer.

De Mytt and Hannigan start out by training their sights on the high concentration of free alkali which is characteristic of alkali mercaptan lotions in commercial use. They say that this high free alkali concentration makes the solution irritating to the skin making it advisable to take certain troublesome precautions in handling the solution, such as the wearing of protective gloves on the hands or the frequent rinsing of the hands during use of the solution and the exercise of care not to apply excessive amounts of the solution to the scalp (which is often said to show noticeable flushing even when normal amounts are applied thereto during the waving). Also, at high alkali and mercaptan concentrations the action on the hair may be undesirably severe in some cases. It is pointed out that these difficulties are troublesome enough in the beauty shops but are much more so in home waving where the solutions are normally handled by non-professionals.

The inventors point out further that the alkalinities have been obtained by the use of ammonium hydroxide because it has always been a desirable mild base for waving preparations. But it is noted that the high ammonia content of solutions adjusted to a pH above 9.0 with ammonium hydroxide has led to a strong and undesirable odor in the lotion.

Attempts to avoid these deficiencies have been made by others. Lower free alkali concentrations and a lower pH have been tried. The inventors say that the resulting compositions were not sufficiently effective and furthermore involved other difficulties such as malodor, decomposition, possible toxicity, and expense. It is said that the solutions in commercial use have continued to employ only alkali-mercaptan in combinations as the waving agent. While the search for other and more satisfactory waving compositions has been extensive, so far nothing acceptable for commercial use has been found.

The suggestion of the inventors is to employ aqueous ammoniacal mercaptan solutions, such as aqueous ammonium thioglycolate solutions, ammonium carbonate or a mixture of ammonium carbonate and ammonium bicarbonate. The addition of these salts to the lotion is said not to require any change in the concentration of the ammonium thioglycolate which may remain at the usual concentration of 0.4 M to 0.8 M. The ammonium carbonate or mixture of ammonium carbonate with ammonium bicarbonate may be employed in concentrations from 0.1 M up to saturation, preferably from 0.1 to 0.9 M. Best results are said to be obtained in the range of concentration from 0.25 to 0.6 M. The pH of such solutions will lie in the range from 7.7 to 9.0, optimum results generally being obtained at pH 8.6 to 8.7.

According to the inventors their waving lotions have the following highly desirable and surprising properties:

1. The pH range at which the solution is effective for commercial cold waving is substantially lowered without impairment of the waving properties of the solution and in-

*Richards and Cifelli, Newark, New Jersey

PRIVATE LABEL AEROSOLS

. . . if you have an aerosol product
. . . if you have an aerosol project
. . . if you have an aerosol problem

LET
G. BARR & COMPANY
HELP YOU . . . Tens of millions of successfully selling aerosols are custom formulated and/or filled by G. Barr & Company for many of the nation's leading concerns. These are testimonials of leadership . . . earned through outstanding aerosol research laboratories . . . creative product development . . . meticulous quality control . . . effective production economies. And . . . G. Barr & Company markets no products of its own.

Whether you need help in developing a new aerosol idea or in filling a current product . . . whether you need 1,000 units or a million per week, G. Barr & Company's three aerosol filling plants—New York, Chicago, Los Angeles, can take care of your requirements now. Three key locations to assure you of freight savings and on-schedule delivery.

- *Aerosol filling by refrigeration or pressure.*
- *Aerosol packaging in metal, plastic, and glass containers.*
- *Aerosols as sprays, foams, powders.*
- *Aerosol cosmetics, insecticides, pharmaceuticals, waxes, cleaners, polishes, household products . . . your new product idea.*

Address inquiries to: 3601 S. Racine Avenue, Chicago 9, Illinois

G. BARR & COMPANY

Plants in: New York • Chicago • Los Angeles

deed, in many cases, with improvement of the waving properties.

2. Even at substantially lower pH values, this solution, in many cases, substantially increases the speed of the waving process.

3. The solution of the present invention has less tendency to overwave degraded or damaged hair.

4. The condition of the hair after waving with the present solution has improved combing properties, appearance, and feel.

5. The new solution is less irritating to the skin and the irritating odor of free ammonia is substantially reduced.

6. The new solution has substantially less tendency to cause yellowing of gray hair.

The following example, taken from the patent, is said to show the marked advantages of the new Gillette process:

A typical home cold waving lotion in present commercial use is an aqueous solution of 0.5 M ammonium thioglycolate containing free ammonia so that it has a pH usually above 9, together with small quantities of a wetting agent, an opacifier, and a perfume.

For comparison with such a regular lotion containing 0.5 M ammonium thioglycolate and 0.5 M free ammonia, pH approximately 9.4, a lotion was prepared according to the present invention containing 0.5 M thioglycolic acid and 0.8 M ammonium bicarbonate, the solution being brought to a pH of 8.6 to 8.7 by the addition of ammonia or ammonium hydroxide, the addition of ammonium hydroxide serving to convert a portion of the ammonium bicarbonate to ammonium carbonate. The lotion also included the same wetting agent, opacifier, and perfume, as mentioned above in the same amounts.

The two solutions were then extensively compared by the so-called "split head" technique in which a wave is given to one side of a head of hair with one lotion and simultaneously, to the other side of the same head of hair with the other lotion. The waving procedure employed with both lotions was the same, being that used with the regular lotion in commercial practice, including treatment with a conventional neutralizing solution, aqueous potassium bromate solution, after processing for up to 90 minutes with the waving lotion. These comparative tests continued on a large number of different heads showed consistently that:

In many cases, particularly on normal or resistant hair, the optimum wave of desired character was obtained in 20 to 30 minutes less time with the carbonate lotion; the optimum wave produced on the carbonate lotion side was at least equal to and, in many cases, superior to the optimum wave produced on the regular lotion side in the development of curl strength, uniformity of wave, and wave permanence, for all types of hair;

there was less change in the physical properties of the hair throughout the waving process with the carbonate lotion, and in general, the hair was in better condition after waving with the carbonate lotion than it was after waving with the regular lotion, having a more lustrous appearance, better combing properties, better resilience, and better feel;

the carbonate lotion had substantially less tendency to overwave degraded or damaged hair and less tendency to cause yellowing of gray hair;

there was less skin irritation on the carbonate lotion side, which was apparent from the fact that there was less flushing of the scalp on that side and less smarting, whereas in some cases, smarting occurred on the regular lotion side.

A table of different lotions which are said to be typical is given below as taken from the patent.

An idea of the coverage of the patent protection obtained is given from claim 1 which is reproduced below.

A liquid composition for the cold permanent waving of hair comprising in aqueous solution a water-soluble mercaptan and at least 0.1 M material selected from the class consisting of ammonium carbonate and a mixture of ammonium carbonate with ammonium bicarbonate, the solution having a pH in the range 7.7 to 9.0.

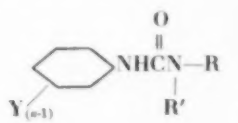
	A	B	C	D	E	F	G	H	I	J
Ammonium thioglycolate, molarity	0.5	0.6	0.7	0.7	0.6	0.65	0.65	0.60	0.6	0.7
Ammonium bicarbonate, molarity	0.8	0.6	0.6	0.2	0.4	0.70	0.10	0.15	0.8	0.7
Ammonium carbonate, molarity	...	...	...	...	...	....	0.25	0.30	....	....
Ammonium hydroxide, molarity	0.5	0.5	0.5	0.2	0.3	0.55	....	....	0.50	0.07
Total ammonia, molarity	1.8	1.7	1.8	1.1	1.3	1.9	1.25	1.35	1.9	1.47
pH	8.7	8.8	8.7	8.4	8.6	8.7	8.5	8.6	8.6	7.8

Patent Facts Save Money (cont.)

Under this title last month we tried to show how to save a lot of time, trouble and money in securing patents. In a nutshell, the answer lies in making a full disclosure in the patent application as filed.

Although specific suggestions were made as to what constitutes a full disclosure in patent applications dealing with chemical inventions, space did not permit an actual example of a patent which could be used to illustrate the point. This omission can now be corrected as U. S. 2709648, issued only 10 days before this writing, seems to furnish the answer.

The invention there dealt with a mixture of herbicidally active compounds in which the compounds are mutually activating to give a greater-than-additive (i.e., synergistic) result in killing or preventing the growth of the same plant species. More specifically, the compositions contained, in admixture with another herbicidally active compound, a herbicidal aryl alkyl urea compound represented by the formula:



wherein Y is from the group consisting of halogen, nitro, alkyl and alkoxy, the alkyl radical in said alkyl and alkoxy substituents containing 1 to 6 carbon atoms inclusive, *n* is an integer from 1 to 4 inclusive, R is an alkyl radical containing 1 to 6 carbon atoms inclusive, and R′ is a radical from the group consisting of hydrogen and alkyl containing 1 to 6 carbon atoms inclusive; and wherein said herbicidal compounds in said admixture are mutually activating and produce a synergistic effect.

Thus we have a perfectly straightforward situation where someone has found that a mixture of two different ingredients possesses better properties than could be foreseen from a knowledge of the properties of each ingredient. So far there is nothing unusual, except of course for the finding itself. However,

(Continued on page 126)

ARE *Beautiful Hands* THE BASIS OF YOUR BUSINESS?

Then consider the bases
that are our business

ABSORPTION BASE #326 TO BE EXACT

Hand beauty begins with this proven Base. Smooth and stable and containing lanolin, its uniformity is always dependable . . . it's economical, too.

Absorption Base #326 is versatile—fluid enough to double as a body or beauty rub—its fine smooth spreading quality makes it a superior powder base.

Are you formulating a new product? Our background, experience, our pioneering of new trends have brought Morningstar international recognition as the most progressive manufacturer of Absorption Bases for all cosmetic products.

Call on Morningstar for free technical assistance in the early stages of your manufacture and eliminate costly mistakes. Morningstar Absorption Bases can help you improve your present product as well. Call or write us about your problem.

MORNINGSTAR, NICOL, INC.

630 West 51st Street, New York 19, N. Y. • Phone: COlumbus 5-2860

NEWS...

Hiebert Heads Sterling Drug

J. Mark Hiebert, executive vice-president and a director, has been elected president of Sterling Drug Inc., according to James Hill, Jr., chairman of the board and retiring president.

Dr. Hiebert has been with Sterling and its subsidiaries since 1934.

Mr. Hill became president in 1941 and assumed the additional office of chairman in 1949 on the death of Edward S. Rogers.

J. MARK HIEBERT

Schneller with Wyeth Labs.

Dr. George H. Schneller, formerly with the fine chemicals division, American Cyanamid Co., has been appointed director of the project coordination division of the research and development department of Wyeth Laboratories, according to H. W. Blades, executive vice-president. He will assist in coordinating the activities associated with the development of new or improved Wyeth pharmaceutical products.

Marquart Heads Hyland Labs.

Fred W. Marquart has been appointed president of Hyland Laboratories, succeeding G. Preston Snow who resigned May 26. He has also been named a member of the board of directors of Baxter Laboratories, Inc. He had formerly been vice-president and treasurer of Hyland.

Anderson Buys Ralph Wilson Co.

Arnold Anderson, formerly vice-president of Roubechez, Inc., has purchased the Ralph Wilson Co., Greenwich, Conn., manufacturer of fine brass and plastic caps. This firm had previously been owned by Roubechez.

Atkinson Retires—Pfizer

William W. Atkinson, retiring as head of the purchasing department, Chas. Pfizer & Co., was honored at a dinner in the Hotel Granada, Brooklyn, on June 13. He will remain with the company in an advisory capacity until the end of the year.

At the dinner, Mr. Atkinson was presented with a grandfather's clock, an engraved plaque carrying his dates of service with the company (1906-1955) and a specially reprinted front page from a 1906 issue of *Oil, Paint and Drug Reporter*.

Left to right, John E. McKeen, president; William W. Atkinson, purchasing agent; and George A. Anderson, former president and board chairman, Chas. Pfizer & Co., at dinner on June 13 in honor of Mr. Atkinson who has retired. He has been with Pfizer since 1906.

Making the presentations on behalf of Mr. Atkinson's business associates were John J. Powers, Sr., retired vice-president of Pfizer; John E. McKeen, president; Frank D'Antonio, assistant purchasing agent; and George A. Anderson, former president and board chairman.

Mr. Anderson hired Mr. Atkinson as a $4-a-week office boy when the firm employed less than 200 people to manufacture a small line of industrial chemicals.

Musser Appointed by Carbide

Robert J. Musser has been appointed assistant manager of the market research department, Carbide & Carbon Chemicals Co., according to John A. Field, vice-president. He will assist Dr. A. H. Tenney, manager of the market research department, in surveys of future markets for established chemicals as well as for new chemicals coming from the research laboratories.

He had formerly been assistant division manager of purchases, primarily for organic chemicals.

Stokes with van Ameringen

Sydney N. Stokes has been named assistant to the executive vice-president of van Ameringen-Haebler, Inc., and will assume his new duties on August 1, according to Charles P. Walker, executive vice-president. He was formerly regional sales manager for Merck & Co. and has been associated with that company for the past 21 years in various executive capacities in sales, sales promotion, distribution and administration.

He has had a broad experience in the fields of pharmaceutical, cosmetic and industrial chemicals and nutritional products for the food and beverage industries.

SYDNEY N. STOKES

Shattuck Retires from Abbott

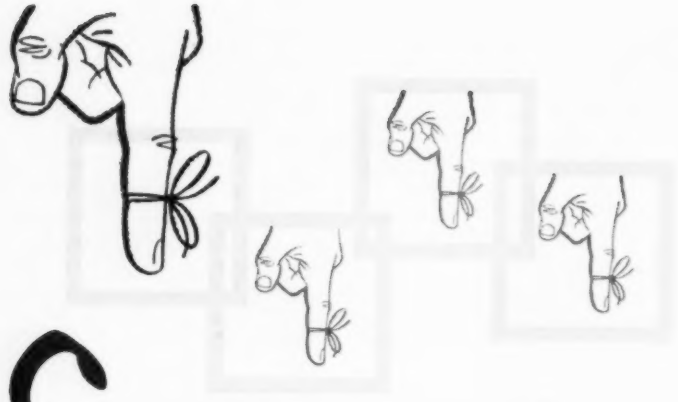
Ewart L. Shattuck, supervisor of eastern branches and manager of the New York area branch of Abbott Laboratories, has retired after 42 years with the company. He had been manager of the New York branch for the last 20 years and supervisor of eastern branches for 17 years.

He has been succeeded by Hugh C. Harris, northeastern division sales manager, with offices at 200 Green St., Teterboro, N. J. The Rockefeller Plaza office of Abbott's New York area branch has been closed.

New Plant for Brockway Glass

The Brockway Glass Co. broke ground at Freehold, N. J., for its new glass container plant on June 1. Those attending the ceremonies were G. A. Mengle, president; F. B. Hess and R. L. Warren, Jr., vice-presidents; A. M. Saperston, secretary; D. L. Sheesley, treasurer; and Jean Masbach.

Expected to be in operation by the spring of 1956, the Freehold plant will be similar to the company's four other plants and will employ about 250 people. The other operations are located in Brockway and Crenshaw, Penna.; Muskogee, Okla; and Lapel, Ind.

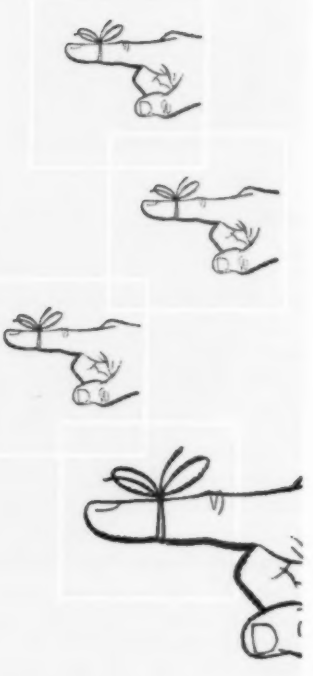


Something worth remembering!

Your dependable source

of IPA is

SHELL CHEMICAL



When you order isopropyl alcohol from Shell Chemical, you gain in three important ways. You get guaranteed high-purity IPA, available in three grades, to meet your specifications. You get prompt delivery from strategically located bulk depots. And you can save money by taking advantage of bulk prices available through multi-product deliveries in compartment tank cars and trucks.

Write for technical literature and sales specifications.

SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

380 Madison Avenue New York 17, New York

Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco • St. Louis

IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver

JOE D. ROBERTSON

J. C. GAUNTLETT

W. C. SUGG

Robertson with J. H. Day Co.

Joe D. Robertson has been appointed new southeastern territory representative for the entire line of Day Machinery, according to Martin Miller, president of the J. H. Day Co. Before joining this company he had been sales engineer of the F. J. Stokes Machine Co.

Fischer Retires from MM&R

William Franklin Fischer, retired as general sales manager of Magnus, Mabee & Reynard, Inc. on June 1. He was honored by company executives and many business friends from the candy and other industries at a dinner on May 31 at the Manhattan Club, New York.

Percy C. Magnus, president, presented Mr. Fischer with a gift of appreciation from the board of directors, stating that he was the oldest member of the company, in terms of length of service. Mr. Fischer started as an office boy under Mr. Magnus' father, Percy Cecil Magnus, Sr., the founder of the business, in 1907.

Mr. Magnus spoke feelingly of Mr. Fischer's many years of faithful, loyal service, and of his many contributions to the welfare of the company over a period of almost half a century. He said that his departure would leave a void in the organization.

Other speakers included vice-presidents Joseph B. Magnus, Robert B. Magnus and George H. McGlynn; Robert P. Ford, Robert P. Ford Co.; Andrew H. Heide, Henry Heide, Inc.; David P. O'Connor, Penick & Ford, Ltd.; R. J. Schulze, the Atlantic & Pacific Tea Co.; Irving C. Shaffer, Just Born, Inc.; and Louis J. Woolf, H. Kohnstamm & Co., Inc.

Mr. Fischer is planning to visit Camp Pendleton, Calif., and spend several months with his son, a colonel in the Marine Corps. Next year, he hopes to spend some time in Europe.

Upjohn Appointments

W. C. Sugg has been appointed assistant director of sales by the Upjohn Co., according to W. F. Allen, vice-president and director of sales. He will continue to supervise the Atlanta and Memphis branches and at the same time take charge of the sales education department, veterinary sales department and the sales and supervisory training program. Mr. Sugg has been with the firm since 1931.

The title of J. C. Gauntlett has been changed from advertising manager to director of advertising.

Owen Baughman has been appointed head of the sales division budget department, while H. E. Shepart succeeds him as head of the price determination and catalogs department.

MacNair on CSMA Board

Ira P. MacNair, publisher of *Soap & Chemical Specialties* and *American Ink Maker*, was elected to the board of governors of the Chemical Specialties Manufacturers' Association on May 15 in Chicago. He fills the unexpired term of the late M. J. Flanagan, Federal Varnish division of Enterprise Paint Corp., who died last month.

Barbasol, Lucky Tiger Merger

The Barbasol Co., manufacturers of shaving products, and the Lucky Tiger Manufacturing Co., makers of hair tonics and shampoos, merged their sales forces on June 1. Under the plan, all salesmen will work in smaller, more concentrated areas, enabling each one to provide more thorough store-by-store coverage.

As in the past, all orders for merchandise, invoice payments and correspondence will be addressed to the Barbasol Co., Indianapolis, Indiana, and the Lucky Tiger Manufacturing Co., Kansas City, Missouri.

Smith Retired from Roure-Dupont

Alvin E. Smith, manager of the Canadian branch of Roure-Dupont, Inc., is retiring after 30 years of service with the company. He was honored by a luncheon last month at the Waldorf-Astoria Hotel, New York, which was given by J. d'Aigremont, president; and Louis Amic, head of Roure-Bertrand Fils et Justin Dupont in France. Mr. Amic was visiting this country at the time.

Attending luncheon in honor of Alvin E. Smith (third from left, seated) who is retiring as Canadian branch manager of Roure-Dupont, Inc., after 30 years of service with company. Left to right, seated: Andre Fromentin; Adele Wisner; Jacques d'Aigremont, president, Roure-Dupont; Mr. Smith; Louis Amic, president, Roure-Bertrand Fils et Justin Dupont; and Mrs. Marion Tabor. Standing: Russell G. Ricketts, Edward F. Galvin and Clarence Lang.

Sheffield Expansion—Chicago

Sheffield Tube Corp. has expanded its Chicago facilities with a new building located at 2850 Congress Expressway, Broadview, Illinois. The structure houses both offices and warehouse facilities in a new industrial district which will be only 12 minutes from downtown Chicago on the completion of the new expressway in a short time.

New building of Sheffield Tube Corp. in the Chicago area which houses both offices and warehouse.

Parish Elected to Upjohn Board

Preston S. Parish, a production superintendent, has been elected to the board of directors of the Upjohn Co., according to Donald S. Gilmore, chairman of the board and managing director.

W. F. Little, associate superintendent of production, has retired from the board, on which he has served for 26 years. He has been with the firm since 1900.

Scheller with G. F. Harvey

James C. Scheller, former vice-president of Barry Laboratories, has been appointed advertising and sales promotion manager for the G. F. Harvey Co., according to E. S. Thomforde, general manager.

This appointment was made in connection with a general program of expansion of research, marketing and advertising plans on the 75th anniversary of the company.

Barr Exec. Appointments

Douglas Atlas has been elected vice-president in charge of sales, G. Barr & Co., and Gene Riegler, assistant secretary, according to George Barr, president. Both positions were created in connection with the firm's expansion program which began recently with the opening of a branch plant in New York City. A third plant, located in Los Angeles, will be in production shortly.

Legion of Honor to McKeen

John E. McKeen, president of Chas. Pfizer & Co., was awarded the Legion of Honor on June 9 by the government of France. The ceremony took place during the inauguration of Pfizer's newly-built French plant at Massy in the department of Seine et Oise.

The new plant, built in partnership with the French chemical firm, Clin-Byla, is geared to the production of Terramycin and Tetracyn, and will be able to produce a variety of other antibiotics, pharmaceuticals and chemicals.

Mr. McKeen was made Chevalier in the National Order of the Legion of Honor as a token of his company's achievements in the field of medical chemistry and in appreciation of its cooperation with the French chemical industry, according to Maurice Couve de Murville, French Ambassador to the United States.

Abbott Appointments

Elmer O. Krueger, manager of the control laboratories, has been named director of control by Abbott Laboratories. Dr. Arthur W. Weston, formerly in the company's research division, has become assistant director of development. George R. Ryan, assistant to the director of production, has been appointed assistant director of packaging.

Dow Absorbs Versenes Inc.

Versenes Inc., Framingham, Mass., which was purchased in November, 1954, by the Dow Chemical Co. and operated since then as a subsidiary, has been absorbed by the parent company, according to Dr. Leland I. Doan, Dow president.

Manufacture of the series of chelating agents sold under the trade names of Versene and Versenol will continue at the Framingham plant, but the sales and development functions are being transferred to Dow's headquarters in Midland, Mich.

Advantages of the new arrangement include improved customer service resulting from Dow's wide-spread sales service organization and product distribution system.

Simultaneously with the transfer, Dow announced a price revision, effective June 15, which resulted for the most part in lower prices to many customers, especially those requiring chelating compounds in carloads or mixed carloads. At the same time, price increases went into effect on single-drum lots of certain products.

Hon. Degree to Roeg

Louis M. Roeg, Merck & Co., received the honorary degree of Doctor of Science from the St. Louis College of Pharmacy & Allied Sciences on June 16 in recognition of his "long service to the science of pharmacy and to the pharmaceutical industry." He recently completed 25 years of service with Merck.

Palmer, V.P., Hyland Labs.

John W. Palmer has been promoted to vice-president and treasurer of Hyland Laboratories, according to Fred W. Marquart, president, who stated that he was also named to the board of directors. He retains his responsibilities as director of the laboratories, in charge of technical aspects of Hyland operations.

DOUGLAS ATLAS

GENE RIEGLER

WARDIA IS ACKNOWLEDGED BY THE WORLD'S LEADING PERFUMERS TO BE THE FINEST OF ALL ROSE SPECIALTIES

FIRMENICH & CIE.
SUCCESSEURS DE
CHUIT, NAEF & CIE.
GENEVA SUISSE

FIRMENICH INCORPORATED

250 WEST 18TH STREET, NEW YORK 11 • FIRMENICH OF CANADA, LIMITED, 348 WALLACE AVENUE, TORONTO • CHICAGO OFFICE: 612 NORTH MICHIGAN AVENUE • GENEVA • PARIS • LONDON

FIRMENICH . . .

AND THE

SCIENCE OF FRAGRANCE

It is gratifying to us that our ethical contribution to fragrance creations helps so many perfumers achieve originality and distinction in their products. In their use of specialties by Firmenich, they enjoy working with basic materials of the highest fidelity, concentration and olfactive purity. To the science of fragrance, and to those whose skill and imagination keep it ever exciting and constantly expanding, Firmenich continues its contribution by new discoveries and development.

FIRMENICH
INCORPORATED

250 WEST 18TH STREET, NEW YORK 11 • FIRMENICH OF CANADA, LIMITED, 348 WALLACE AVENUE, TORONTO • CHICAGO OFFICE: 612 NORTH MICHIGAN AVENUE • GENEVA • PARIS • LONDON

Colton Expansion

Arthur Colton Co. has begun a $500,000 plant expansion program which will double the company's floor space for the building of pharmaceutical, chemical and food industry machinery, according to Kenneth B. Hollidge, executive vice-president, who stated that it is the largest expansion in the history of the company. The entire program will be completed by early fall of this year.

The 20,000-square-foot factory expansion will be made at the company's main plant, 3400 E. Lafayette Ave., on a three-acre plot. It will also provide expanded production and testing facilities for the parent company. Snyder Tool & Engineering Co.

Colton also operates plants in Detroit and Mancelona, Mich.

Architect's drawing of Arthur Colton Co.'s $500,000 plant expansion program which will double the firm's floor space for building pharmaceutical, chemical and food industry machinery. It is expected to be completed by early Fall of this year.

With Ansbacher-Siegle

Robert Schoen has been appointed sales representative of Ansbacher-Siegle Corp., according to Eric N. Blackstead, vice-president and general manager. He will assist his father, A. H. Schoen, in the Philadelphia territory. The latter has been Philadelphia district manager since 1926.

ROBERT SCHOEN

Cyanamid Office in Cinn.

American Cyanamid Co., fine chemicals division, recently opened a branch office in Cincinnati to provide improved service to customers of its pharmaceutical and veterinary products in the eastern central states. The address is 2350 Glendale-Milford Road.

Fred V. Rowland, who has been with Cyanamid for eight years, represents this office.

Named P&T Purchasing Agent

Joseph P. Ogulnik, assistant purchasing agent, has been promoted to purchasing agent of Park & Tilford, according to Henry C. Bernard, president. He succeeds John G. Toomey who died recently after 34 years with the company.

Sales Mgr., Matchabelli

Paul P. Woolard has been promoted to sales manager of Prince Matchabelli, according to Owen Stoner, president. He joined the company in 1950 as a salesman and three years later was appointed assistant sales manager.

Bush with Baird Chemical

Edward A. Bush has been appointed head of the newly established aromatics department, Baird Chemical Corp. He had formerly been manager of the aromatics division of Rhodia, Inc. Under his direction, the aromatics department will act as sales agents and brokers for essential oils and aromatic chemicals.

EDWARD A. BUSH

Pfizer Appointments

Burns Geiger has been appointed director of hospital sales and promotion of Pfizer Laboratories, division of Chas. Pfizer & Co., according to Thomas G. Bradley, director of sales and promotion. He had formerly been director of trade relations for Pfizer and government sales manager of J. B. Roerig & Co.

Other appointments in the hospital sales department include Norman Bullard as hospital sales administrator; Charles Gill, field supervisor; Boyd Neubourne, manager, government contract sales; Donald C. Riley, manager, professional relations; and Ollie Murname, field supervisor, professional relations.

Pfizer Forms New Japanese Firm

Chas. Pfizer & Co. has formed a new Japanese-American company for the basic manufacture of Pfizer antibiotics and pharmaceuticals, according to John J. Powers, Jr., senior vice-president. Katsunobu Masuda is president of the new company, which is to be known as Pfizer-Taito Co., Ltd. Mr. Masuda is also executive vice-president of Taito Co., Ltd., one of Japan's largest penicillin producers.

In addition to the expansion of present Japanese packaging facilities for the broad-spectrum antibiotics, Terramycin and Tetracyn, preparations are underway for basic production. Mr. Powers reported that new equipment and facilities will be added as required in the Pfizer-Taito plant at Kobe. Other antibiotics, as well as vitamins, steroid products and Pfizer Pharmaceutical specialties, will also be produced in the new plant eventually.

Carl Blum has been appointed senior managing director of the Japanese firm. A team of Pfizer production engineers, headed by Kingdon Doscher, is being assigned to train Japanese engineers and other personnel in the specific technical processes involved.

The firm of Gohei Tanabe & Co., Ltd., one of Japan's leading pharmaceutical houses, will continue to distribute Tetracyn and Terramycin, as well as other Pfizer-Taito products.

J. H. Day Sales Offices at One Address

The J. H. Day Co., Inc. division of Cleveland Automatic Machine Co., has located all sales and executive offices at 4932 Beech St., Norwood, Cincinnati 12.

Bourguets Return from Europe

Camillie H. Bourguet, consultant and perfumer, and Mrs. Bourguet, are returning from Europe this month after having spent several weeks there on a business and pleasure trip.

Worth Your Investigation...

CYCLAMAL

An Aldehyde of great stability and of such high degree of purity that it can be used in the finest perfume extracts as well as soaps and cosmetics.

RESEDALIA

An Acetal resembling the aroma of Reseda Mignonette. It is a valuable addition to all floral bouquets, and as a modifier for the purpose of rounding off all types of compositions.

VERONOL

An Aldehyde of great potency; imparts the aldehydic top note to perfumes to which it is added. It is extremely valuable as a modifier. Used from 1/10 to ¼ of 1%.

ROSANOL

An Acetal, ideal for all rose type compounds, because of its fine character, great lift and extreme stability.

The advantage of these aromatic chemicals is that their great purity permits their use in the most luxurious perfumes . . . and their low cost makes them feasible for even the most inexpensive soap fragrances.

Sole Representative in the United States for J. and E. Sozio, Grasse, France

Write for our complete catalogue.

PRODUCTS BUILD SALES FOR *Your* PRODUCTS

Aromatics Division
VERONA CHEMICAL COMPANY
Plant and Main Office: 26 Verona Avenue, Newark, N. J.
1210 Rosedale Avenue, Chicago, Ill.

JOHN C. SMITH

ELMER O. KRUEGER

:mith Promoted by P-M

John C. Smith has become M. D. product manager of Pitman-Moore Co., according to S. E. Ruch, general sales-manager. He has been a member of the company's sales staff for five years, operating territories in Vermont and Massachusetts and serving as a sales field trainer and supervisor in the eastern region.

Gottscho Wins Injunction

The Supreme Court of the State of New Jersey on May 23 affirmed an earlier lower court decision that awarded Adolph Gottscho, Inc. a permanent injunction and accounting for damages against John K. Jackson and America n Marking Corp., Newark.

The American company was formed by Jackson in association with a former Gottscho sub-contractor shortly after he was discharged by Gottscho in 1950.

In January, 1954, the New Jersey Superior Court found that American was making and selling machines similar to Gottscho's and decided in favor of the Gottscho company.

Cos. Chemist Elections

The Society of Cosmetic Chemists of Great Britain held its annual general meeting on May 20 and elected the following officers and council for the year 1955-56: President, R. T. Dobson; vice-president, J. Pickthall; secretary, F. Riley treasurer, H. J. Lovell; and on the council, H. W. Avis, J. Bather, H. Holmes, Dr. K. G. Johnson, Dr. R. H. Marriott, Dr. A. W. Middleton and W. P. Pepper.

Anderson, V.P., Revlon

Carl E. Anderson, formerly with E. R. Squibb & Sons, has been appointed vice-president in charge of operations, Revlon Products Corp., according to Charles Revson, president.

Abbott Exec. Appointments

Elmer O. Krueger, manager of the control laboratories, has been named director of control by Abbott Laboratories and put in charge of the entire inspection and testing program.

Dr. Arthur W. Weston, formerly of the research division, has become assistant director of development.

George R. Ryan, assistant to the director of production, has been appointed assistant director of packaging.

Plaut Honored on 40th Anniv.

Edward Plaut, president of Lehn & Fink Products Corp., was honored on his 40th anniversary with the company at a testimonial dinner on June 21 at the University Club. Among the guests were Dr. Charles W. Ballard, Dean Emeritus of Columbia College of Pharmacy; Professor Arthur Thomas, Chairman of the Department of Chemistry, Columbia University; and Dr. Robert Swain, Editor, *Drug Topics*.

The management employees group presented Mr. Plaut with a sterling silver tea service, while he received a sterling silver coffee service from mem-bers of the board.

Heads Research Director Ass'n

Dr. Maurice L. Moore, vice-president for research, Vick Chemical Co., has been elected president of the Association of Research Directors, succeeding Dr. Delbert F. Jurgensen, director of Engineering and Development, Congoleum-Nairn, Inc.

Other officers affiliated with the drug and cosmetic industry who were elected include Roger Lueck, general manager, research & technical department, American Can Co., as a three-year councilor, and David X. Klein, manager of research, Heyden Chemical Corp., two-year councilor.

BioPharmaceuticals Formed

Bioproducts Oreg. Ltd. has formed a new company, BioPharmaceuticals Inc., in Warrenton, Ore., to handle all sales of pharmaceutical products formerly sold by its own pharmaceutical sales division. The new company will be operated under the direction of Mrs. Louise Otten who was formerly in charge of that division.

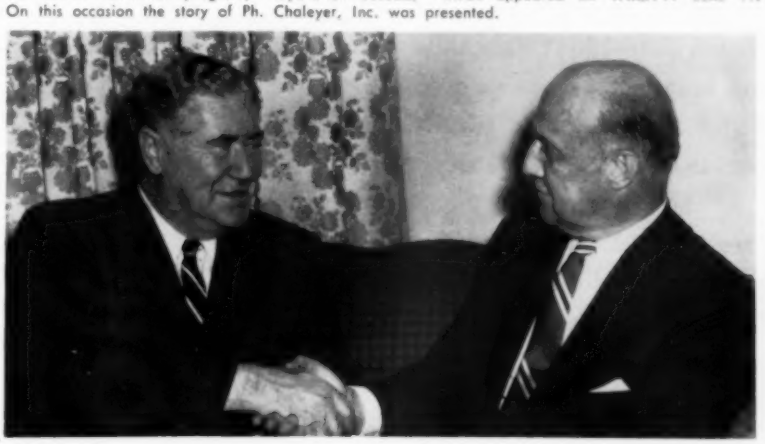
Mrs. Otten will be president of the new corporation, and R. T. Carruthers, president of Bioproducts, a principle stockholder.

Stokes Expands in Toronto

F. J. Stokes Machine Co. has opened a new sales office in Toronto, at 27 Wellington East, in order to give better service to the growing number of customers in Ontario province. J. William Robinson, who has been manager of Stokes' Montreal office since its start in 1953, will be in charge of the new office.

Fred Walters has been appointed a sales engineer with headquarters in the Toronto office.

Quentin Reynolds, left, greeting Pierre Coutin, executive vice-president, Ph. Chaleyer, Inc., during his feature television program, "Operation Success," which appeared on WRCA-TV June 11. On this occasion the story of Ph. Chaleyer, Inc. was presented.



HEXACHLOROPHENE—G-11®-and HEXACHLOROPHENE LIQUID SOAP

NOW U.S.P.

We are pleased to announce that hexachlorophene and hexachlorophene liquid soap have been included in the fifteenth revision of the Pharmacopoeia of the United States.

As the discoverer and producer of hexachlorophene, we welcome this further recognition by the medical profession and the privilege of joining the U.S.P. list of best-known and most important medical aids.

Hexachlorophene liquid soap is the only antiseptic soap recognized by the U.S.P.

G-11® is Sindar's trade-mark for hexachlorophene.

SINDAR® *Corporation*
Industrial Aromatics and Chemicals
330 West 42nd Street • New York 36, N. Y.

Branches: Philadelphia • Boston • Cincinnati • Detroit
Chicago • Atlanta • Seattle • Los Angeles • Toronto

Addition for SKF—Canada

The Canadian branch of Smith, Kline & French Inter-American Corp., subsidiary of Smith, Kline & French Laboratories, is beginning construction of a new 1½-story addition to its headquarters building in Montreal. Costing about $250,000, it is expected to be completed by the end of this year, according to Robert F. Daily, general manager.

Gibney Retires from Sterling

E. P. Gibney, director of Midwest trade relations, retired from Sterling Drug Inc. on July 1 after 43 years of service. He started with the Bayer Company in Chicago in 1912 and has been associated with Sterling in that city ever since.

He was honored by a testimonial dinner on June 17 at the Blackstone Hotel in recognition of his long career in the drug field. This dinner was sponsored by the Illinois Pharmaceutical Travelers' Association.

Mr. and Mrs. Gibney now plan to live in Clearwater, Fla.

Morrow with Hardman Ltd.

A. P. Morrow has been appointed vice-president and director in charge of western sales of Eric H. Hardman Limited, Toronto, Canada, manufacturer of cosmetic containers. He had formerly been advertising manager of General Motors Products of Canada.

Sinotte Promoted by S & D

Dr. L. Paul Sinotte, technical assistant in the quality control division, has been named manager of pharmaceutical control for Sharp & Dohme, according to Dr. J. A. Ellegood, director of quality control. He will supervise four operations of the company, including the pharmaceutical analytical laboratories, formula, label and narcotic control, and checking and inspection.

DR. L. PAUL SINOTTE

Plan of Canadian branch, Smith, Kline & French Inter-American Corp., subsidiary of SKF Laboratories, Philadelphia, includes view of new story-and-a-half rear addition to be started next month.

Ciba Award to Gross

Dr. Jack Gross, associate professor of Anatomy at State University of New York, received the Endocrine Society Ciba Award during the 37th annual meeting of that Society which opened June 2 in Atlantic City. He was honored for his discovery and study of a body chemical known as Compound No. 1, or tri-iodothyronine, a substance which has proved a potent weapon in the treatment of underactive thyroid glands.

The Ciba Award provides for $1,800 plus $700 expenses, should the winner decide to move to a laboratory other than his own for special research. Sponsored by Ciba Pharmaceutical Products, Inc., the Award is made annually to a young scientist who, in the opinion of the Endocrine Society, has made a notable contribution in the field of endocrinology.

York—Katz

Allan E. Katz, vice-president of F. Ritter & Co., and Natalie L. York were married recently in Palm Springs.

Bessinger with Roure-Dupont

Gerald G. Bessinger has joined the sales staff of Roure-Dupont, Inc., and will be in charge of Canadian operations. He will handle special assignments.

GERALD G. BESSINGER

P-M Trophy to Huse

Pitman - Moore Company's northwestern sales region was recently awarded the annual trophy for top regional sales gain at the firm's Sell-O-Bration meeting and banquet, Senator Hotel, in Sacramento, Calif.

Charles Huse, Northwestern regional manager, accepted the trophy which was presented by Kenneth F. Valentine, president.

Herman Burbach, Portland, was named salesman of the year.

Also attending the meeting were L. W. Welch, western divisional manager, and Stewart E. Ruch, general sales manager.

Receive Factor Scholarships

Logan Rassmussen and Franklin Terrio, two California high school seniors, received Max Factor chemistry scholarships on June 3, in connection with the 41st annual high school chemistry contest recently conducted by the Southern California section of the American Chemical Society. The scholarships, amounting to $300 were awarded by the Max Factor Memorial Fund, and were presented to both students by Dr. Paul W. Jewel, chief chemist of Max Factor & Co.

Burt Promoted by P-D

Orrin D. Burt has been promoted from special assistant to the traffic manager, to the position of traffic manager of Parke, Davis & Co. He succeeds R. R. Srigley, according to T. C. Anderson, vice-president and director of production and engineering, who will now serve as a consultant. Mr. Srigley has been with the company for 38 years.

Re-elected Pres., Guardian

Alfred R. Globus was re-elected president of the Guardian Chemical Corp. last month, while A. Richard Diebold was re-elected to the board of directors.

STOP SPOILAGE BY MOLDS AND BACTERIA...

Heyden PARASEPTS®

(ESTERS OF PARAHYDROXYBENZOIC ACID)

IN POLISHES, WAXES, PASTES, GUMS..

IN PHARMACEUTICALS..

If your product is among the many that are subject to mold and bacterial attack, it will pay you to investigate the Parasepts as preservatives. These colorless and practically odorless neutral esters combine the properties of effectiveness, stability and safety, and have long served in a wide variety of products.

Our sales and technical staffs will be glad to discuss your prospective use. Write or phone the nearest sales office for full information and samples.

•

METHYL PARASEPT
Purified
(Methylparaben U.S.P.)

PROPYL PARASEPT
Purified
(Propylparaben U.S.P.)

ETHYL PARASEPT
Purified

BUTYL PARASEPT
Purified

BENZYL PARASEPT
Purified

Technical grades also available for industrial applications. 100, 50, 25 lb. fiber drums.

IN TOILETRIES..

HEYDEN
CHEMICAL CORPORATION

342 Madison Avenue, New York 17, N. Y.

Chicago • Cincinnati • Detroit • Philadelphia • Providence • San Francisco

FINE HEYDEN CHEMICALS

Benzaldehyde • Benzoic Acids • Benzyl Chloride • Beta-Oxynaphthoic Acid • Chlorotoluenes • Creosotes • Formaldehyde • Formic Acid • Guaiacols
Parahydroxybenzoates • Pentaerythritols • Propyl Gallate • Resorcinol • Salicylates • Salicylic Acid • Sodium Benzoate

Colonial Dames' New Plant Ready

Colonial Dames Laboratories is moving into its new plant at 1060 Vail Ave., Montebello, Calif. on about August 1. Located just a few minutes from the heart of Los Angeles, it was scheduled for completion on July 1.

The Hollywood plants are being consolidated with the new, expanded operations. Completely air-conditioned and having the most modern assembly line production equipment, the new Colonial Dames plant and offices encompass 20,000 square feet, with ample parking facilities involving additional space.

Drawing of new plant in Montebello, Calif., which Colonial Dames Laboratories has just completed and will occupy about August 1.

Turner Named Abbott Dist, Mgr.

Edward P. Turner has been appointed district manager of Abbott Laboratories at Atlanta, according to Herbert S. Wilkinson, vice-president in charge of sales. He succeeds George W. Borders who has taken over a special assignment in and around Atlanta. Mr. Turner has represented Abbott in the Winchester, Va., area since 1943.

Wilkinson Retires from P-D

H. E. Wilkinson has retired as house manager for Parke, Davis & Company's Chicago branch after 39 years of service with the firm. He has been succeeded by Frederick A. Heisler with the title of assistant to the manager, in charge of internal operations.

Mr. Heisler, who has been credit manager at Chicago, will be succeeded by William J. Roskopf.

Stevens, Copy Chief, Ciba

Richard L. Stevens has been appointed copy chief of the Ciba Advertising division, according to Paul W. Roder, vice-president in charge of advertising of Ciba Pharmaceutical Products Inc.

RICHARD L. STEVENS

ADM Opens New Plant

Archer-Daniels-Midland Co. held an open house on June 2 at its new fatty alcohol plant at Ashtabula, Ohio. New products from this plant, according to Thomas L. Daniels, ADM president, will have important effects on scores of products including new types of detergents, cosmetics, synthetic rubbers, and paper coatings.

Frank C. Haas, vice-president in charge of the ADM chemical products division, will head the new operation.

This new plant will employ about 50 men. Relatively high output is expected in the near future because pilot plant samples of the new alcohols have been available for some time, and many have already been evaluated by major chemical manufacturers.

Honorary Degree to Fritsch

Homer C. Fritsch, executive vice-president, Parke, Dauis & Co. recieved an honorary Doctor of Science degree from Ohio State University on June 10.

Witco Moves Offices

Witco Chemical Co. and Continental Carbon Co. have moved their offices to 122 East 42nd St., New York 17.

MacCarthy with Bostwick Labs.

Oswald MacCarthy has been appointed director of merchandizing of Bostwick Laboratories, according to Jack Schenberg, vice-president.

OSWALD MacCARTHY

Join Stokes Internat. Div.

Paul Bixler, formerly Latin-American representative for Armstrong Cork Co., and James Culton, previously with the foreign sales division of Smith, Kline & French Laboratories, have joined the headquarters staff of the international division, F. J. Stokes Machine Co., according to Charles V. Nicholson, manager.

Fox, Ass't Sales Mgr., Wirz

Matthew G. Fox has been appointed assistant sales manager of A. H. Wirz, Inc. and will report directly to Mark K. Dresden, president. He has been with the firm since 1940.

Mahan, V.P., A. H. Wirz

Robert Mahan, general manager of the branch plant in Carrollton, Ky., has been elected vice-president of A. H. Wirz, Inc.

With Stokes Sales Staff

Roger H. Watkins has joined the Cleveland sales staff of F. J. Stokes Machine Co. as a senior sales engineer.

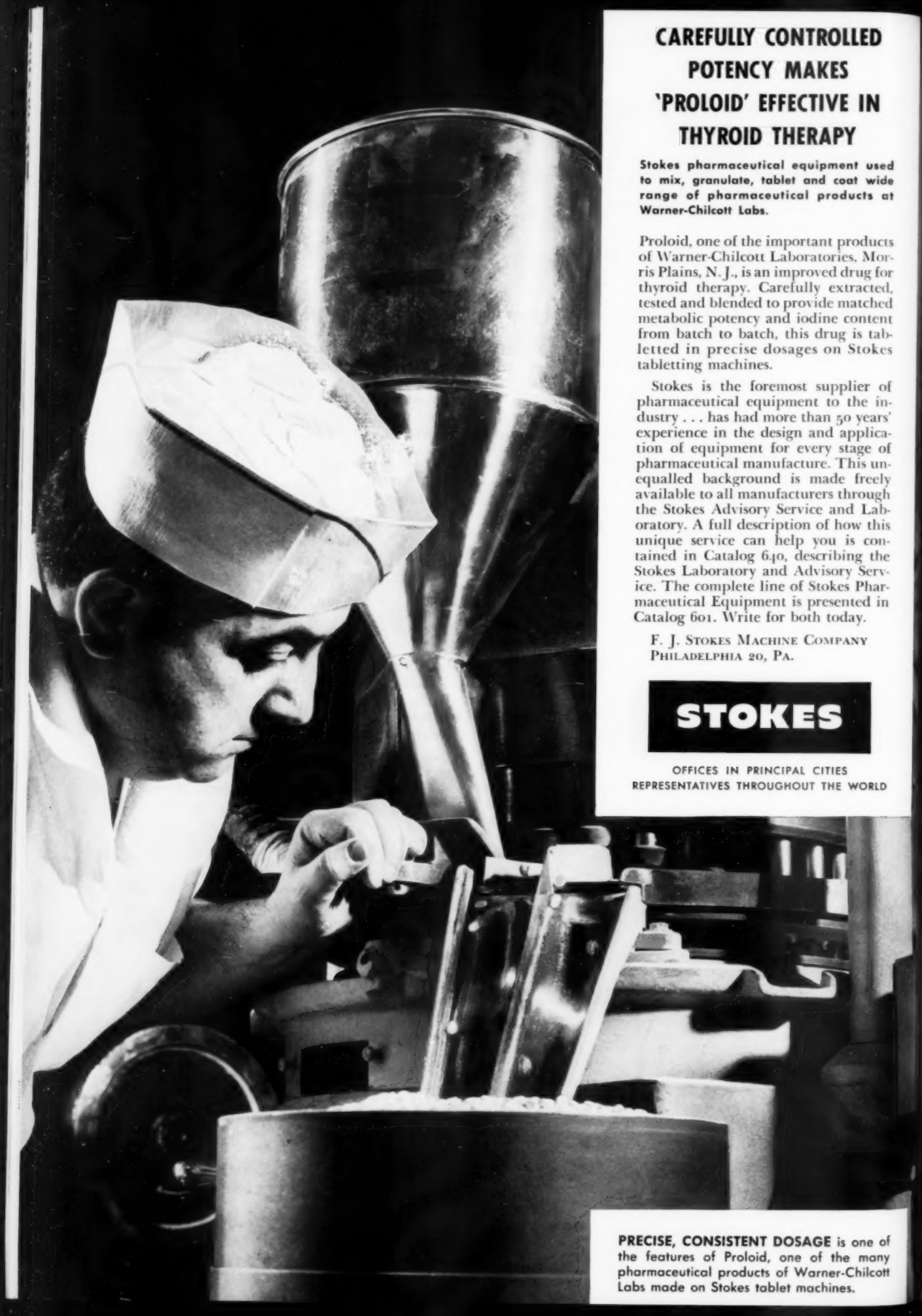
Thomas B. Chadwick

Thomas B. Chadwick, in charge of the Cleveland office of Chas. Pfizer & Co., died at his home at Lakewood, Ohio, June 25, at the age of 58. Born in Brooklyn, N. Y., Mr. Chadwick joined Pfizer 43 years ago as an office boy. He was past president of the Drug and Chemical Club of Cleveland. His widow, Myrnelle, and two daughters, Elizabeth and Beth, survive.

Ernest Morgan Oswalt

Ernest Morgan Oswalt, founder and chairman of the board, Campana Corp. and Campana Sales Co., died June 1 at Mercy Hospital, Denver, Col., where he had undergone emergency surgery on May 25. He was 67 years old.

He is survived by his wife, Hazel; two sisters, Mrs. H. G. Wilcox and Mrs. H. W. Crull; two nieces, Betty Wilcox Stephens and Susan Oswalt Stadler; and three nephews, I. Willard Crull, Richard M. Crull, and Benjamin A. Oswalt.



CAREFULLY CONTROLLED POTENCY MAKES 'PROLOID' EFFECTIVE IN THYROID THERAPY

Stokes pharmaceutical equipment used to mix, granulate, tablet and coat wide range of pharmaceutical products at Warner-Chilcott Labs.

Proloid, one of the important products of Warner-Chilcott Laboratories, Morris Plains, N. J., is an improved drug for thyroid therapy. Carefully extracted, tested and blended to provide matched metabolic potency and iodine content from batch to batch, this drug is tabletted in precise dosages on Stokes tabletting machines.

Stokes is the foremost supplier of pharmaceutical equipment to the industry . . . has had more than 50 years' experience in the design and application of equipment for every stage of pharmaceutical manufacture. This unequalled background is made freely available to all manufacturers through the Stokes Advisory Service and Laboratory. A full description of how this unique service can help you is contained in Catalog 640, describing the Stokes Laboratory and Advisory Service. The complete line of Stokes Pharmaceutical Equipment is presented in Catalog 601. Write for both today.

F. J. Stokes Machine Company
Philadelphia 20, Pa.

STOKES

OFFICES IN PRINCIPAL CITIES
REPRESENTATIVES THROUGHOUT THE WORLD

PRECISE, CONSISTENT DOSAGE is one of the features of Proloid, one of the many pharmaceutical products of Warner-Chilcott Labs made on Stokes tablet machines.

Management Forum

by Francis Chilson

INDUSTRIAL CONSULTANT

Airing the Skeletons

Nearly everyone has a skeleton in his, or his family's closet and it is desirable to open the closet doors once in a while so that the bright sun light can shine upon the white bones.

During the course of reading about Goëthe I discovered that George Merck's great grandfather was an alchemist and an intimate friend of Goëthe's. According to the reference Goëthe used his friend as the prototype of Faust. When I kidded Mr. Merck about this, he accused me of rating the Mercks down and he informed me that Göethe had used his ancestor as the prototype of Mephistopheles! Anyway there it is. It seems that chemicals of all sorts have been in the Merck blood for a long time. The Mercks have been lucky too. When I was in Darmstadt a few years ago, I found the town blasted to bits—all but the Merck plant on the outskirts of the town, and this had suffered the loss of only one small building. (Merck of Germany is owned by relatives of George Merck.) Possibly Ancestor Faust or Ancestor Mephistopheles or both were on hand to ward off the bombs. When I returned home I mentioned this to a friend of mine, Colonel Vergne Chappelle, and, by an odd coincidence, it turned out that Colonel Chappelle had captured Darmstadt during the recent war and had commandeered the Merck homestead as his headquarters. It was, the Colonel told me, a typical German castle outside, but inside it was furnished with antiques and art works of untold value as well as all the latest American gadgets including Crane plumbing!

The new president of the A.P.M.A., Ken Valentine, is probably the handsomest and certainly the best dressed president the association ever had. He looks like a page from next month's Esquire. It is a fact that Esquire gets its ideas for men's style from Ken Valentine. Bob Hardt told me that Ken has mirrors on the four walls of his dressing room so that he can be certain before going out to confront the populace that not a hair is misplaced or a wrinkle anywhere evident. I met Ken and Bob one night in the lobby of the "21." They were waiting for their wives.

Ken was sitting in an easy chair to which was tied a pup, that someone had just given Max Krindler. Ken picked the pup up and held it against his manly chest, stroking it affectionately. The pup appreciated the affection but lacked any appreciation for sartorial splendor. Also he lacked a check valve in his nether parts. So he piddled all over our new president's bright new raiment. It was light gray too, the raiment I mean. So we of the APMA have the distinction of having a president, who has had the distinction of having been piddled on in the "21" Club. And that is indeed a distinction for a boy from the Tall Indiana cornfields.

John Walmsley of Aspro Ltd. was one of the distinguished guests at the recent Proprietary and APMA meetings. "Sir John" has made a tremendous impression on everyone he has met on this, his third trip to the "States." It was said by many people that it is a pity England does not send more Englishmen of his type to this country. It was also said that it is a good thing there aren't many more Walmsleys over here, or we'd become a bloody British colony again. I want to spike a dastardly canard that was bruited about concerning his parentage. It was said that he is not the eldest son of the Earl of Twickenham but the youngest son of Lord Wobbly and therefore not a Knight at all. This is a bloody lie. There's not a bit of Wobble in him. On many a night on the town with him I have wobbled; other people have wobbled but not Sir John. He remained as steady as the lions in Trafalgar Square. I shall look into Burke's Peerage when I get to London next week and get the facts. It won't be the same register as the one in Burke's Bar on Third Avenue, where I had the honor in locum tenens of conferring knighthood upon him with a baseball bat (which he said wasn't cricket). But, as it is inscribed on the plaque, presented to Frank Dowe after his recent honeymoon, "Once a Knight always a Knight. And once a night is enough."

THE *Aerosol Valve* FOR YOUR PRODUCT *by Precision*

The picture tells a story... the story of overwhelming popularity, tremendous growth and continued reliance on a quality product... PRECISION VALVE.

The use of over 200,000,000 time-tested valves by hundreds of completely satisfied customers throughout the world, is your assurance that PRECISION has the answer to your aerosol program regardless of product or container.

We invite your inquiry to enable our staff of aerosol valve technicians to work cooperatively in satisfying your valve requirements.

PRECISION

Precision Valve Corporation

700 NEPPERHAN AVENUE • YONKERS 3, NEW YORK

London Commentary

In the recent Queen's list published in London, according to the New York Times, Lord Mountbatten was decorated with the Order of the Bath. It is highly appropriate that Alfred Chalk, inspector of flushing for London County Council, received at the same time the British Empire Medal for his outstanding knowledge of the London sewers. What good is a Bath without a sewer connection? I have often remarked the scarcity of baths in English hotels. Because of this I have often been puzzled by the fact that Englishmen always seem about to take a bath. The expression is "I'll have a bath." I know what they mean now. It doesn't mean they're going to wash themselves; it means they are about to put on their decorations.

You can always depend upon the English to follow through, although they may be a bit dilatory about it. The Order of the Bath was established many centuries ago, and it is fitting indeed, that they have at last tied it up with the Order of the Sewer—"flushing" to be delicate about it. The Order of the Bath is one of England's highest honors. It is very scarce—as scarce as bathtubs and that is why, I presume, it was so named. Now that the sewers have been hooked up with the Baths everything should be right as rain from now on. Citizens of Flushing, Long Island, will be chagrined to learn that the name of their town is synonymous with "sewer."

Research

Research chemists, particularly the younger ones, very often become discouraged because there seems to be no more new fields to conquer. When they scan the voluminous literature on all and every disease and all the multitudinous remedies that have been discovered for these diseases, they suffer a feeling of hopelessness, which itself is a malady that they themselves can find a remedy for. Apart from that when they think of the thousands of scientists engaged in medicinal research all over the world they have a feeling of acute futility.

To them I would address a word of encouragement. Only a few years ago when the antibiotics came in all other medicines were made obsolete according to the pessimists. The wonder drugs would cure everything. But they didn't. These drugs proved to have limitations and, some of them, serious side effects, so that today more medicines than ever before are being sold. The fact is that research is just getting started. We really don't know much about anything. For example we don't know precisely the physiological manner in which such a common drug as aspirin secures its effect.

It would be presumptuous of me who am not a research scientist to suggest either an unexplored field of research or even a new approach, but to those who are discouraged let me on the broad canvas of the unknown point out some common things about which we know nothing in order to emphasize how little we really know about anything.

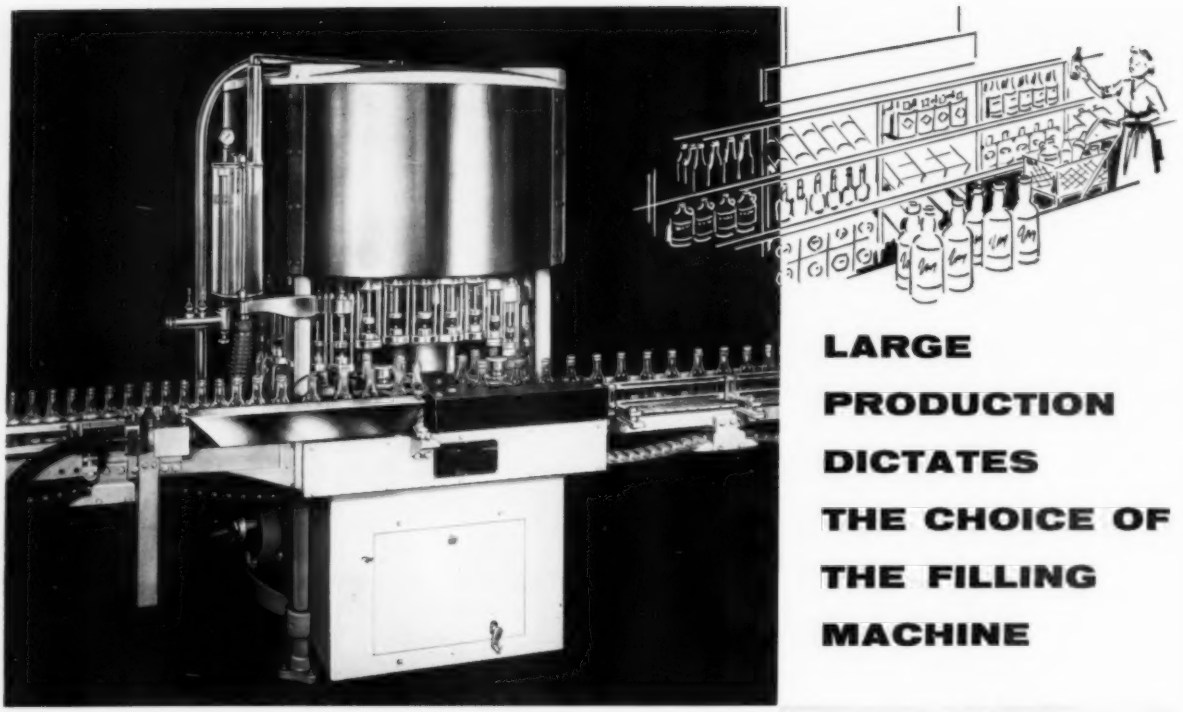
We know much about the structure, function and diseases of the ear but little or nothing about how it really works and nothing at all about how it can be physiologically improved. We do know that our hearing has a limited range between lower and upper waves of sound. We know our hearing is less acute than that of animals, particularly that of a dog. We know there are on the market dog whistles so highly pitched that only a dog can hear them; we cannot. Keats said "Heard sounds are sweet, but those unheard are sweeter." With poetic insight Keat knew there is a whole world of sound we know nothing of. The ancients believed the stars made music as they rolled along in their predestined paths. Maybe they do, but we hear not.

We know much about the structure, function and diseases of the nose, but we do not know how we smell. We know that by practice we can improve our sense of smell as a perfumer does. We know that an expert perfumer can detect several hundred odors, while the ordinary individual can detect only a few relatively strong ones. Even the expert perfumer's sense of smell is dull compared with that of a dog. How can a dog, running as fast as he can, follow the scent of a rabbit, a deer, a fox or a man clad in shoes over clay and sand and rocks and odoriferous leaf moulds? How can the dog follow unerringly and at high speed the scent of the particular object he is after even though that scent is mixed with the scent of other animals that have crossed the trail? We know there is a whole world of smell beyond our limited nose.

We know much about the structure, function and diseases of the eye but we do not know precisely how we see. We know that dogs and other animals can see farther than we can. We know that we can see the various colors of the spectrum in all their hues and tones. But who is to say there isn't an unknown world of color beyond the alpha and omega of black and white? It is said that by mathematical means Einstein determined that there are colors beyond the range of the known spectrum. Maybe the story is apocryphal but who is to say that animals and birds cannot detect colors that we know nothing of?

We know much about the structure, function and diseases of the skin but nothing about the sense of touch. We do know that some people have a more sensitive sense of touch than others; the blind particularly. The safe expert can feel the tumblers in a safe drop and thus can open it, even though he does not know the combination. I saw a blind man read a card on which I had written a sentence with his finger tips. The blind man feels the wall before he runs into it, just as the blind bat flying through the air at incredible speed swerves to avoid hitting a tree. So what is this sense that covers our entire bodies and how does it react to external stimuli?

We know much about the structure, function and diseases of the tongue, the mouth and the throat but we know little or nothing about the sense of taste. Each of us ordinary mortals can detect the gross tastes:

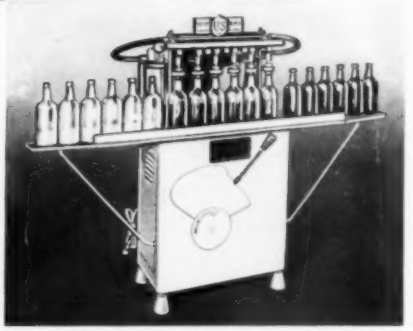


LARGE PRODUCTION DICTATES THE CHOICE OF THE FILLING MACHINE

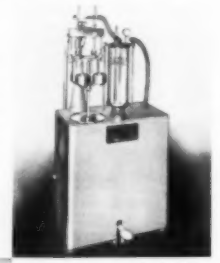
For filling liquids to meet large-volume, low mark-up merchandising requirements, U.S. Rotary Vacuum Fillers are meriting first choice by the packagers of national brands. From the click of the starter to the end of each long run, the dependable efficiency of these machines is easing the cares of production executives the world over.

If your production schedules have outgrown your equipment, it will pay you to learn what two generations of liquid filling engineering experience can contribute to your operation. Learn, too, how U.S. automatic liquid filling equipment can be custom-engineered to your specific production requirements . . . at a substantial end saving over a standard machine.

For recommendations or quotations, please specify product, size and type of container and production in terms of fill per minute, hour or day. For details of the machine, write for the Rotary Filler Bulletin.



U. S. Model B-49 Straightline Vacuum Filler; the most automatic one-man filler. Operates with or without discharge conveyor. For all types of liquids. Write for Model B-49 Bulletin.



U. S. Model B-2 Semi-automatic Vacuum Filler. Provides efficient continuous production, filling two containers at a time. For all containers up to 4¼" dia. All liquids. Portable. Write for Model B-2 Bulletin

U. S. Siphon Filler. Efficient for all liquids including foamy products or products that do not permit agitation. Stainless steel tubes; acid resistant glass lined tank. Improved model. Adjustable. Write for the Siphon Bulletin.

U. S. BOTTLERS MACHINERY COMPANY

Specialists in Liquid Filling and Container Cleaning Equipment

4013 North Rockwell Street — Chicago 18, Illinois

BOSTON • NEW YORK • PHILADELPHIA • HOUSTON • DALLAS
LOS ANGELES • SAN FRANCISCO
DENVER • SEATTLE • PORTLAND

PHOENIX • NEW ORLEANS • TAMPA
ATLANTA • CANADA: MONTREAL
TORONTO•VANCOUVER•WINNIPEG
EXPORT OFFICE: TOLEDO, OHIO

LOOK TO U. S. FOR EVERY LIQUID FILLING REQUIREMENT

sweet, sour, bitter, salty, mouldy. We know that the sense of taste can be trained and there are in consequence, experts who can taste particular substances even when these are in solution but a few parts per million. But in total darkness, with the nostrils plugged, even the experts can be led far astray. How then does taste work?

By what mechanism, medicine, diet or training can we, the lords of creation improve our senses so that we in this respect may become the equals of the lower animals?

There is so much to learn in our short time on this planet, that, however diligent we are, we can never learn everything that can be known about anything. It is a great pity that, having learned something, we take it with us when we go, excepting for that small part which we may have committed to the literature or left behind us in more tangible forms. In any case knowledge is an inexhaustible resource.

Remember the Alamo

Governor Shivers is trying to bail out a pond with a pitchfork when he asks for the death penalty for all Communists in Texas.

America, most of all nations, should know you can't fight ideas with physical weapons. Christianity didn't die when Christians were thrown to the lions. Protestantism didn't die on the rack. Democracy in America was not suppressed by British tyranny. Freedom was not destroyed by the Buchenwald gas chambers.

Bullets can't kill ideas. Conspiracy is not eliminated by chaining those conspirators you catch, although that must be done.

We are not fighting for men's bodies. We are fighting for men's minds. Our most potent weapons are persuasion and conversion. To employ them we must be wise enough to speak to the man under the domination of Communism in terms he will understand and words he will believe. Then we must be big enough to offer him an honorable alternative to what he now believes.

Most of the refugees from Russia came to our side because the stern Russian system would not allow them to lead normal lives in the USSR. For one reason or another they became political outcasts, economically and socially dispossessed, and were therefore made outlaws. They had nothing to lose in deserting to our side.

If we offer a man no choice for changing his views but death, it should be obvious that he will remain where he is.

In spite of the fear which seems at times to reach a wild frenzy, as in the lunatic ravings of the man who killed Maxwell Bodenheim and his wife and screamed in court he should get a medal for killing Communists we have in our system the existence of things which men have dreamt about for centuries.

We must of course be vigilant in guarding against treason. We have to exert great care in choosing those who will handle our secrets, both technical and policy secrets. We have to face the might of Communism's armies with the armies of the Free World.

But it is the wonders of a Free World, not its might, which will win an ideological war.

We cannot command India to join our side. We cannot stamp out Communism in France or Italy with American tanks. We cannot push the Iron Curtain of the mind back with bayonets.

Governor Shivers forgets that the appeal of a free society has a magic that is stronger than atomic bombs in the war for men's minds. It is the wonderful opportunity of a free society symbolized by Texas oil derricks, not a few Commies hanging by the neck from one, which will battle the evil religion of Communism.—*From the Dallas Post.*

Communication

There are three kinds of communication: telepathic, emotional and intellectual. In the first instance communication between different minds is achieved, sometimes at a considerable distance without the intervention of words—oral or written. We know this happens with great frequency especially between people of sensitive natures and between friends who long have worked together. In business we are not concerned particularly with this type of communication.

Emotional communication is achieved when ideas are transmitted from one mind to another without the formulation of words, as for instance when one is reading poetry or listening to music. Emotional communication is of interest in business only when the ideas transmitted are antagonistic.

The kind of communication we are interested in primarily is intellectual. In this type of communication ideas are transmitted by means of words either oral or written. Now, to register ideas in the intellect of another person, great care must be used to make sure that the communication is made clearly and simply and presented in a manner that will not arouse an antagonistic emotional response before the communication reaches the intellect. The mind of man may be conceived of as being like an orange with the intellect as the core, surrounded by emotional segments, which vary all the way from receptivity, through indifference and from love to hate. The whole may be regarded as being enclosed by a skin or rind of awareness which determines the emotional path through which a communication must pass to reach the intellect. If therefore the manner of presentation is so bad that it arouses anger, resentment or indifference there can be no communication. The path to the intellect is blocked.

Stokes Introduces New Drying Cabinet

F. J. Stokes Machine Company, Philadelphia, Pa., has introduced a new drying cabinet for rapid, efficient drying of pharmaceutical granulations, effervescent salts, rouge, and other fine chemicals.

WHAT'S NEW WITH COLTON?

THREE PRESSES IN ONE

The only multiple-layer tablet press featuring 1 or 2 or 3 layer tablets at 1300 per minute with simple conversion to standard double rotary operation at 2600 tablets per minute. The special efficiency of a special machine plus the everyday versatility of a standard machine—insurance against obsolescence in event of future changes in product. Write for details on Colton No. 243 Tablet Press.

Machine is for use with your straight line production conveyor. Demonstration conveyor illustrated is not standard.

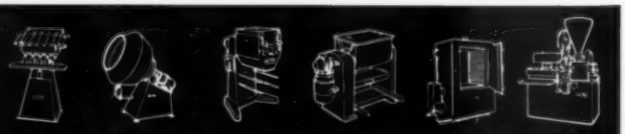
FOUR FILLERS IN ONE

Simple conversion to 4-6-8 or 12 spouts, with extra manifolds —no size change parts required within any of these multiples —160 to 480 fills per minute in most shapes and sizes up to 4 fl. oz., glass or plastic. Fully automatic. Ask for details on Colton Multiple Liquid Fillers.

ARTHUR COLTON COMPANY

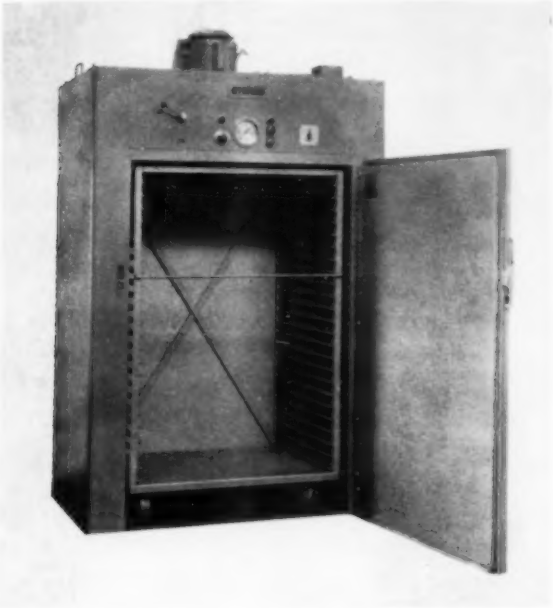
DIVISION SNYDER TOOL & ENGINEERING COMPANY
3523 E. LAFAYETTE • DETROIT 7, MICHIGAN
PLANT NO. 2—500 BELLEVUE, DETROIT • PLANT NO. 3—MANCELONA, MICHIGAN
Sales and Service Engineers Coast-to-Coast
Export Office—13 E. 40th St., New York City
Offices in Principal Cities Throughout the World
Specialists in Pharmaceutical and Filling Machinery for Over 70 Years

Write for complete details on these new Colton machines. Find out why THE NEW INSTALLATIONS are COLTON.



Containing approximately 40 cubic feet of drying space, the new Stokes Model 38-C cabinet has room for 24 trays, each 28 inches by 35 3/8 inches, with ample clearance between the shelves (1½ inches) for good circulation of the air over the material on the trays.

Six 1800-watt finned strip-type heaters give the unit ample heat-generating capacity. An electric interlock between the blower and the heater circuit prevents the



heaters from being energized unless the blower is on, thus protecting the heaters from overheating and burning out.

Three separate dampers control the fresh-air intake, the exhaust stack, and the flow of recirculated air, by means of which the intake of fresh air can be precisely proportioned to the floor of recirculated air to give the exact drying action desired.

The dryer is a plenum chamber type, in which the blower creates a lateral pressure differential. This causes the heated air to circulate horizontally across the trays, insuring that material in the upper and lower strata of the chamber dries uniformly and equally rapidly.

All controls are centrally located on the front of the chamber above the door, and a manual-reset timer, with a range of up to 10 hours, permits semi-automatic control over drying operations.

The cabinet has no projections in either its back or its sides, which allows it to be set flush against a rear wall or snugly side-by-side with other units.

Pump for Emptying Drums

An air-operated "Direct-From-Drum" pump which quickly empties fluids from 55-gallon drums is available from Gray Company, Inc., Minneapolis 13, Minnesota. This Fast-Flo pump operates either in open head or 2" bung opening of original drums.

Operating on air pressures from 35 PSI-200 PSI, this pump can empty a full sized drum of essential oils, aromatic chemicals and materials, flavoring, colors and many other fluids in three minutes. Or, it may be used to supply filling machines requiring only a small amount at a time.

This light-weight (only 13½ lbs.) Fast-Flo "Direct-From-Drum" pump can quickly and easily be switched in seconds from the emptied drum to a full one.

The illustration shows a Graco Fast-Flo pump supplying a Plough, Inc. filling machine with Moroline, white petroleum jelly. The machine in turn fills vynite tubes (made by Continental Can Company, Inc.)

For further information write for Fast-Flo Booklet No. 300-012, Gray Company, Inc., 1026 Sibley Street N.E., Minneapolis 13, Minnesota.

Stokes Machine Compresses a Dry Coating on Tablets

Tablets with a "raincoat" compressed from dry powder around the core tablet of the active ingredient—can be made at relatively high speed by a new tablet-within-a-tablet machine recently announced by F. J. Stokes Machine Company, Philadelphia, Pa.

The new Stokes machine makes it possible to sugar-coat penicillin, or to coat protectively other active ingredients. Such dry-coated tablets do not have to be compressed so hard, and thus they disintegrate more rapidly and go to work more quickly than tablets which have been coated by the customary pan-coating procedure—laborious and time-consuming as it is. Moreover, penicillin and certain other pharmaceuticals could not be pan-coated because the moisture in a wet syrup coating would damage the stability of the penicillin and would similarly affect the other active ingredients.

The Stokes tablet-within-a-tablet machine will produce tablets up to ½ inch in diameter at rates up to 500 per minute. The core tablet is held to a concentricity of plus or minus .005 in. within the finished tablet.

The coating powder is fed to the die by two hoppers; the core tablets are fed in bulk by a separate feeder. A special device developed by Stokes centers the core tablet within the finished tablet with a high degree of accuracy. Odd-shaped tablets as well as standard round can be made.

Finest Advertisement of all

for

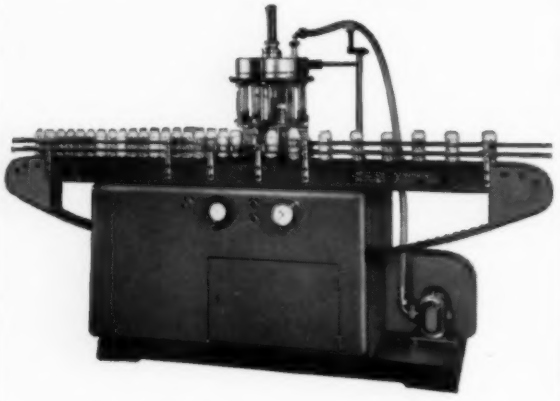
Kiefer

CADET MODEL

VARI-VISCO FILLER

is the machine itself!

for glass, tins, polyethylenes



Watch it on the job—giving a distinguishing performance. Witness astounding results—clean, quick—so precise in reliable volumetric delivery.

"Yes," smoothest operation on all facial creams, lotions, salves. Equipped with container lift for "bottom up" fill . . . gives viscous material a solid pack or avoids splash with all liquids. Automatic feed and discharge conveyor.

Completely automatic, semi-automatic, hand-feed equipment to clean, fill, close, convey jars, bottles, tins, collapsible tubes, polyethylenes.

The Karl Kiefer Machine Co.

CINCINNATI, OHIO, U. S. A.

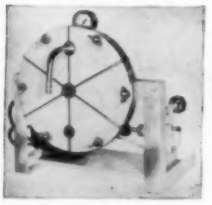
NEW YORK • BOSTON • CHICAGO • PHILADELPHIA • SAN FRANCISCO
HOUSTON • SAVANNAH • LONDON, ENGLAND

Ertel Filters

FOR LABORATORY AND SMALL LOT PRODUCTION

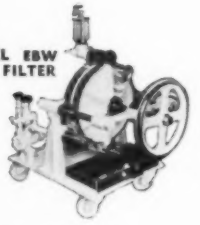
Model 10 in either stainless steel, hard rubber, or brass, nickel or silver plated, to meet all laboratory filtration requirements, provides the versatility that ranks it "tops" in modern laboratories. Model E-1 is recommended for lab or batch filtration of 5 to 10 gallons. Model EBW is the smaller production unit that has solved hundreds of operations for extremely low initial investment.

MODEL No. 10 CYLINDER TYPE



MODEL E-1 SINGLE DISK

MODEL EBW FILTER



Experience has proven that the great majority of filtration problems can be solved by our engineers with their seasoned background of filtration experience. What's your problem?

ERTEL ENGINEERING
CORPORATION

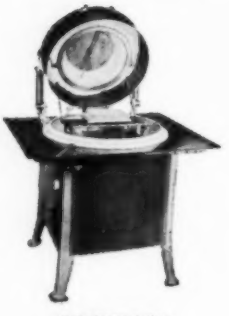
KINGSTON 1, NEW YORK
Branch Office & Showroom Located in New York City

OUR REPRESENTATIVES ARE LISTED IN THOMAS REGISTER

COMPLETE LINE OF *Liquid Handling Equipment*

ERTEL

NEW MASS HANDLING WASHER DELIVERS 40 GROSS OF AMPULS HOURLY



AMPWASH MODEL GW-12

High speed production ampul washer embodies new loading technique designed to eliminate the usually individual handling of each container. A "box dumping method" enables the attendant to remove the ampuls from the glass manufacturer's box and transfer them, one gross at a time, directly on to the machine. Latest model can also be adapted for mass handling and washing of vials.

PerfeKtum
TRADE MARK REG.

Write for catalog #454 describing entire line of PerfeKtum equipment, including new rubber stoppering and aluminum crimping machines.

EST. 1922 **POPPER & SONS, INC.**
300 FOURTH AVENUE
NEW YORK 10, N. Y.

Imperfect tablets (those which do not contain a core tablet) are rejected automatically by means of an electric sensing device.

Standard punches and dies are used in the new Stokes press. The standard excess pressure release mechanism prevents crushing of the tablets and also, by equalizing the pressure above and below the tablet, insured finished tablets of uniform density.

New Multi-Grind Pulverizer

A new multi-grind pulverizer, designed to insure the purity of a product, has just been introduced by the Pulverizing Machinery Division, of Metals Disintegrating Company, Inc., 141 Chatham Road, Summit, New Jersey.

This new mill, designated as the Mikro-Multi-D, handles grinds in the four to 20 mesh range with precise particle control. While applicable for many industries, it is especially designed for the food and drug fields, where products must be carefully guarded against spoilage or contamination.

Tests show that the new unit can be disassembled and reassembled in less than two minutes. Cleaning

time varies with nature of material, but entire job can be handled in less than 12 or 14 minutes at the very outside.

Unit is powered with either a 3 or 5 hp. motor depending upon capacity desired. Capacities of 500 to 2,000 lbs. per hour are obtained on average materials.

Filling and Sealing Equipment

A new kind of hood that safeguards pharmaceuticals from outside air during the filling and sealing operation has been designed by the Westronic Manufacturing Co. for Lakeside Laboratories, Inc.

The hoods are of stainless steel and are totally enclosed in glass except for an area that is open for manipulations. At the top is a bank of ultra-violet tubes, with pliotron air filters immediately beneath. All the air is taken in from the top, passed over the filters, and fed out the side. The hood is held under positive pressure, and there is no cross contamination between the outside air and air trapped in the chamber.

High-Speed Colton Tableting Press

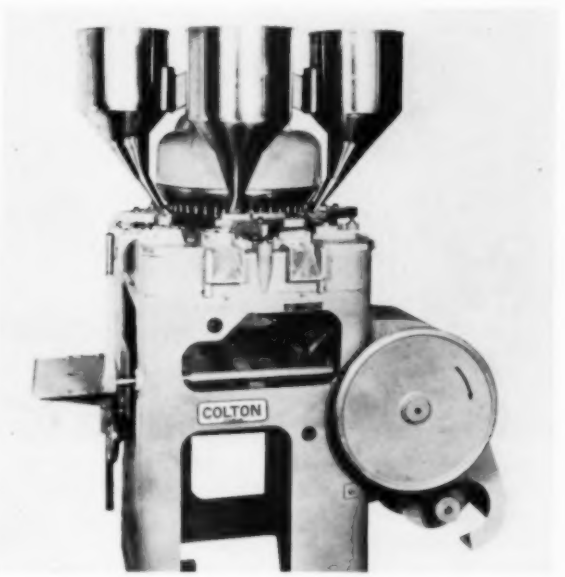
A new high speed rotary tableting press that permits production of three-layer tablets with varying materials and material proportions at rates up to 1,300 tablets per minute is now available from Arthur Colton Company, 3400 East Lafayette Avenue, Detroit 7, Michigan.

Called the Colton Multi-Layer Rotary Tabletting press, it will produce three-layer tablets consisting of three compatible materials or two non-compatible materials separated by a buffer. Proportions of the materials can be accurately adjusted according to the manufacturer's particular formulation requirements. Over-fill materials are recovered individually on the press during operation.

This high-speed rotary tabletting press opens up an entirely new field for economical production of multiple layer tablets. It is also possible for pharmaceutical manufacturers to utilize the presses to eliminate certain preliminary blending operations by combining various materials in tablet form.

Typical tablets that can be produced on the Multi-Layer press include multiple-vitamin complexes, effervescent combinations, two-stage medicants and many other types where non-compatible materials must be separated by a thin barrier material.

One important economy advantage of the new Colton press to tablet manufacturers is the ability to convert it with standard parts and no machining to a standard Colton double rotary high speed tabletting machine that will produce standard tablets at rates of 2,600 tablets per minute. Two-layer tablets can be produced on the press by not feeding one of the hoppers in a three-layer press set-up.



DOW PROPYLENE GLYCOL, U. S. P.

FOR THE "SOOTHING EFFECT" IN YOUR LOTIONS

. . . lotions and creams quickly become customer favorites when they soothe and soften without stickiness

To the formulator it's known as emollient action—to the woman who buys, it's "that soothing effect". Whatever the description, that important quality is always in your product when you use Dow propylene glycol, U.S.P.

Important, too, is the economy of formulation many manufacturers have experienced by replacing more expensive ingredients with propylene glycol.

You may also be interested in propylene glycol's effectiveness as a carrier, humectant and preservative in these or other types of cosmetic preparations.

Dow propylene glycol, U.S.P.—standard of dependability in quality and supply—is now shipped from strategically located terminals across the country for faster delivery.

To improve your product—and your profit—send for a free sample and information on the properties of propylene glycol, U.S.P. Write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. OC 813G-1.

you can depend on DOW CHEMICALS

Compounder's Corner

PVP in Cosmetics

The properties of polyvinylpyrrolidone and the possibilities of using this compound as a thickening and binding agent in cosmetics are discussed in *Seifen, Ole, Fette, Wachse* by E. Benk. The material is commercially available as a white powder or as a concentrated solution.

The compound can be dissolved in water, monovalent alcohols, simple glycols, glycerin, acetone, methylene chloride and chloroform. Strong aqueous solutions are viscous and sticky; they are stable, as they are not subject to hydrolysis or to microbial decomposition. PVP is not toxic and does not irritate the skin.

PVP can be used as a thickening, binding, stabilizing and adhesive agent in cosmetic and pharmaceutical products. It is useful as a base for hair fixatives, as a foam-stabilizing and skin-protecting admixture to hair shampoos and as a stabilizing agent for skin food, hand creams, lotions. When used with liquid powders, compact powders, mascara, face packs, etc., PVP is useful not only because of its binding and thickening properties but also because of its adhesive effect. The last-named property is particularly valuable in connection with dentures.

Pearly Creams

In a vanishing cream based on stearic acid according to V. Vasic (*P.E.O.R.* 46:80, 1955), pearliness is due to the absence of interfering ingredients rather than to the presence of substances likely to promote pearliness.

The pearliness is practically suppressed if the cream contains a high amount of fatty alcohol or a polyhydric alcohol fatty acid ester of the glycol or glyceryl stearate, myristate or palmitate type. The addition of fats or oils inhibits the formation of pearliness to greater or lesser extent, depending on fat added and the amount present.

The addition of a small amount of oleic acid or oleates accelerates the appearance of pearliness. Potash and triethanolamine will usually produce pearly creams.

The humectants have influence on the developing of pearliness. The creams produced with sorbitol syrup and propylene glycol develop pearliness much quicker than the creams produced with glycerine.

The way of manufacturing also has influence on the developing of pearliness. The mixing of the cream next morning after manufacturing for about 10-15 minutes will make cream softer and will considerably speed up the formation of pearliness.

Pearly Vanishing Cream 1

Stearic acid	**16.0**
Sorbitan monooleate	**2.0**
Cetyl alcohol	**1.0**
Mineral oil	**1.2**
Propyl p-hydroxybenzoate	**0.2**
Glycerine	**6.0**
Water, distilled	**73.0**
Potassium hydroxide	**0.6**

The above formula gives a very good pearly cream. The vanishing effect on the skin is excellent. The cream does not dry out on standing in open jars as quickly as other creams.

Pearly Vanishing Cream 2

Stearic acid	**16.0**
Cetyl alcohol	**1.0**
Diethylene glycol stearate	**3.5**
Almond oil	**1.5**
Mineral oil	**1.5**
Propyl p-hydroxybenzoate	**0.2**
Glycerine	**7.5**
Water, distilled	**68.4**
Potassium hydroxide	**0.4**

Dosage Forms

T. D. Whittet discusses modern aspects of drug administration in an article reproduced in *Chemist and Druggist* 163: 452, 1955.

The most common form of oral presentation is the tablet. Coatings should only be applied to tablets to cover the taste of very nauseous drugs or to protect the active ingredient from decomposition by atmospheric oxygen, moisture or carbon dioxide. Enteric coating might be necessary to prevent destruction of the drug by gastric acid, to prevent nausea with irritating drugs, or when the action of the drug is required in the intestine.

Hard gelatin capsules are now widely used. They are a convenient method of administration and have the advantage of more rapid disintegration.

In prescribing for children, the use of flavored liquid medicines is almost unavoidable. The barbiturates and antihistamine drugs are now often dispensed in the form of elixirs containing a high proportion of alcohol together with glycerin or propylene glycol. Since those drugs are much more potent than those previously dispensed in liquid form, it is becoming more essential that patients should use medicine glasses to measure doses accurately. The dispensing of highly potent drugs as very palatable preparations also bring the danger of accidental poisoning of children. The soluble barbiturates are quite stable in propylene glycol, whereas they are relatively unstable in aqueous solution. Calciferol has been shown to be much more readily absorbed when administered in propylene glycol than when given in oil. The following methods of masking unpleasant tastes are available: The use of a flavoring agent which had something in common in its flavor with the bitter drug, e.g., orange with gentian or quinine; the use of substances such as menthol or oil of peppermint to produce a mild local anesthesia in the gustatory areas; the use as a vehicle of coloidal substances like mucilage of acacia; and the use of moderate concentrations of sodium chloride.

The parenteral route is probably the most important method of drug administration available. Substances for subcutaneous or intramuscular injection are usually limited to a *p*H range of from three to 8.5. Outside that range severe pain may be caused and excessive alkalinity is likely to cause necrosis of the tissues. The stability of many injections is also greatly affected by *p*H. Some are deliberately made hypertonic, e.g., hypertonic saline or dextrose to relieve intracranial pressure in patients suffering from meningitis or hydrocephalus. Intrathecal injections are usually made isotonic with the cerebrospinal fluid, but spinal anesthetics are often made to have a density greater or less than cerebrospinal fluid to influence the area of anesthesia.

If a drug intended for injection is insufficiently soluble in water, other non-toxic solvents such as propylene glycol can be added. Insoluble drugs can be given intramuscularly in the form of either oily or aqueous suspensions. Some oil-soluble drugs can be made water-

The Fifth* Sense
(Olfactive sense)
Since 1768, or nearly 200 years, the House of Chiris has dedicated itself to the Fifth Sense—the olfactive sense. In the development of Essential Oils, Floral Absolutes, Chemical Isolates, Synthetic Chemicals, and all of those creations and specialties which combine industrial aromatics with natural products and produce fragrance, the House of Chiris has a cherished history. Today Chiris maintains laboratories headed by experienced olfactive chemists who have available to them not only the "know how" of generations of Chiris chemists but also the research facilities of three continents and four modern laboratories located in: FRANCE—GRASSE & PARIS; GREAT BRITAIN —LONDON; BRAZIL—SAO PAULO and NEW YORK CITY. Whether Essential Oils, Isolates, or combinations thereof, are used as fragrance constituents by the perfumery, soap, cosmetics, or allied industries, we are happy to be consulted.
ANTOINE CHIRIS CO. INC.
220 East 23rd Street, New York 10, N. Y.
GRASSE • PARIS • LONDON • SAO PAULO
* Chemical Senses, page 1, Moncrief—lists senses as follows: " sight, hearing, touch, taste, smell." Note smell is listed Fifth.

soluble by converting them into glycosides. Oil-soluble drugs have also been injected intravenously in the form of emulsions.

One method of delaying absorption is by adding adrenalin or other vasoconstrictors to injections. Generally speaking, the more water-soluble a drug, the more rapidly it was absorbed. The obvious method of prolonging a drug's action is therefore to convert it into a less soluble salt, ester or complex, and to inject that either as a suspension or as a solution from which it would be precipitated, at the site of injection, when it came into contact with tissue fluids.

Increasing the viscosity of an injection also prolongs the action. When a water miscible solvent is used to prepare an injection of a water insoluble drug the solvent, after injection, will be rapidly diluted by the tissue fluids and the drug precipitated. The effect is thus much the same as that produced by an aqueous suspension. When an oily preparation is injected it is the surface area rather than the volume that determines the rate of release of the drug. Thus a more rapid effect will result from the administration of a given volume if it is divided and injected into two or more sites.

The subcutaneous implantation of compressed or fused tablets is now a well - established method of depot therapy.

In contrast to depot therapy giving prolonged action, the opposite effect can be obtained by the use of hyaluronidase which, when added to fluids injected into subcutaneous tissues, produces rapid spreading and absorption of the injected material.

Sorbic Acid Fungistat

A study of the fungistatic property of sorbic acid is reported by Pul, Lindgren and Cosgrove (*J. Am. Pharm. Assoc. Sci. Ed.* 44:85, 1955).

Sorbic acid is superior to benzoic acid as a fungistatic agent against *Aspergillus niger* and an unidentified *Penicillium* species when tested by the agar-disk-plate method.

Sorbic acid concentrations as low as 0.05 per cent preserve 35.0 per cent acacia mucilage, 6.0 per cent tragacanth mucilage, 1.0 per cent guar gum solution, and 26.0 per cent sucrose solution when stored at 5, 25, and 37° for thirty days. Species of *Allernaria*, *Penicillium*, *Aspergillus*, and *Pseudo-yeast* were identified in the controls and in some samples containing less than 0.05 per cent of preservative.

Multivitamin Elixir

T. D. Whittet (*Pharm. J.* 174:201, 1955) described the multivitamin elixir manufactured at University College Hospital, London as an example of emulsifying agents used for solubilizing.

Vitamin A in oil	**40**	**mu.**
Calciferol	**0.21**	**Gm.**
Peanut Oil to make	**45.0**	**Gm.**
Riboflavin	**0.6**	**Gm.**
Nicotinamide	**7.5**	**Gm.**
Thiamine Chloride	**1.5**	**Gm.**
Ascorbic Acid	**40.0**	**Gm.**
Calcium Pantothenate	**1.5**	**Gm.**
Pyridoxine Hydrochloride	**0.75**	**Gm.**
Sweet Orange Essence	**7.5**	**ml.**
Saccharin Elixir	**40.0**	**ml.**
Tween 80	**90.0**	**Gm.**
Propylene Glycol	**650.0**	**ml.**
Distilled Water to make	**1000.0**	**ml.**

The dry riboflavin and nicotinamide are first mixed together and then heated with 25 ml. of water to solution. Dilute to 200 ml. and add the ascorbic acid, thiamine, pantothenate and pyridoxine and stir until dissolved. The oil soluble vitamins are dissolved in the oil, the solution mixed with the Tween and the aqueous solution added in portions with thorough mixing. The remaining ingredients are now added and the solution made up to volume.

Tablet Compression Energy

Energy expended in the tablet compression process was calculated by Nelson, Busse and Higuchi (*J. Am. Pharm. Assoc. Sci. Ed.* 44:223, 1955) by consideration of the magnitude and relation between the several compression variables. In the compression of about 0.4 Gm. of unlubricated sulfathiazole granulation to a maximum force of 1200 Kg. on the lower punch with flat-faced 3/8-inch punches, about 8.6 calories were expended. For about the same weight of lubricated granulation the corresponding value was about 2.0 calories. By considering that only energy expended in the process of eliminating void space to form the tablet caused a temperature rise in the tablet, the temperature rise expected in the lubricated or unlubricated tablets mentioned above would be about 5°. When the energies expended in the processes of tablet ejection, overcoming wall friction and removing the upper punch from the die, were summed for a single punch machine making these tablets at the rate of 100 per minute, it was found that 43 kilocalories would be expended in each hour of operation if the tablets were unlubricated. If lubricated granulation were used the value would be three kilocalories. The bulk of these expenditures would probably cause heating of the punches and die and if the granulation was either poorly lubricated or unlubricated the heating might be severe.

Burrow's Emulsion Formulas

Water-in-oil emulsions of Burrow's solution (five per cent neutral aluminum acetate) can be made according to the following formulas from *Rutgers Pharmacy Extension News*, 5:March 1955:

I.	**Burrow's Solution**	**10**
	Hydrous Lanolin	**20**
	Zinc Oxide Ointment	**30**
II.	**Burrow's Solution**	**4.0**
	Zinc Oxide	**8.0**
	Talc	**8.0**
	Peach Kernel Oil	**25.0**
	Bentonite	**2.0**
	Lime Water to make	**100.0**
III.	**Phenol**	**0.6**
	Menthol	**1.2**
	Zinc Oxide	**20.0**
	Starch	**20.0**
	Burrow's Solution	**80.0**
	Peanut Oil	**160.0**
	Lime Water, to make	**600.0**
IV.	**Lanolin, Anhydrous**	**30.0**
	Olive Oil	**120.0**
	Mix, with heat	
	Zinc Oxide	**30.0**
	Talc	**30.0**
	Mix and add	
	Burrow's Solution	**8.0**
	Lime Water, to make	**300.0**

Stability of Sodium Phenobarbital Solutions

Solutions containing sodium phenobarbital were assayed by G. C. Walker and P. F. Gray (*Can. Med. Assoc. J.* 71:8, 1954) after one, two, three, four, and eight weeks storage at 4, 22, and 30°. At 4° no loss occurred through decomposiyion, precipitation, or mold growth. Heat and prolonged exposure caused decomposition particularly in the more concentrated solutions. Aqueous solutions were slightly less stable than those containing sirup of orange (Brit. Pharm.) or elixir aromatic red (Can. Formulary) in the aqueous vehicle. Propylene glycol had little effect in concentrations up to 20 per cent of the vehicle. Mold growth was serious, mainly in solutions where concentration, temperature, or time were maximum.

Laboratory data sheet

RIBOFLAVIN U.S.P.—'ROCHE' Regular and Solutions types
RIBOFLAVIN-5'-PHOSPHATE SODIUM—'ROCHE'

Roche has 3 types of riboflavin for your manufacturing needs

The table below summarizes for quick reference helpful facts about the 3 types of Roche riboflavin. Samples of these products and a technical brochure giving complete information are available without charge. Ask your Roche representative or the Vitamin Division.

Type & Name	Properties and Uses	Solubility	Crystal Micron Size	Melting Point	Moisture Content
RIBOFLAVIN U.S.P. Roche Regular	Density and low electrostatic properties, plus virtual non-hygroscopicity provide easy handling in preparing powdered dietary supplements, pharmaceutical tablets, soft gelatin capsules and dry enrichment premixes.	0.140-.200 gram. per liter (See Note 1)	Under 20	275°-280°C.	0.8-1.5%
RIBOFLAVIN U.S.P. Roche Solutions Type	For use in parenteral solutions which approach or slightly exceed the maximum solubility of B_2. Less likely to crystallize out.	0.120 gram per liter (See Note 1)	Under 20	285°-290°C.	0.2-1.5%
RIBOFLAVIN-5'-Phosphate Sodium-Roche Theoretical B_2 content: 73% Roche product: 70-73%	Preferred for all solutions. Solubility properties allow high concentrations without use of solubilizers (See Note 2). Better taste; no bitter aftertaste as in riboflavin. Specially valuable for highly concentrated oral and parenteral multi-vitamin solutions (with or without ascorbic acid), elixirs, syrups, water-dispersible multivitamin formulations in gelatin capsules, tablets, lozenges.	Depends on pH (See Note 2)	Very fine crystal	Decomposes above 200°	Small percentage of water of crystallization

Note 1 In water at room temperature after shaking with excess for 24 hours.

Note 2 Solubility in water varies with pH as shown in table at right:

pH	Solubility
3.8	43 mg. per cc.
5.6	68 " " "
7.0	112 " " "

Packaging: In Polyethylene bags. One-kilo tamperpruf metal containers. Larger packings in fibre drums. Small quantities in amber screw cap glass bottles.

Source: Vitamin Division

HOFFMANN-LA ROCHE INC.

Nutley 10, N. J. NUtley 2-5000

Pacific Coast distributor: L. H. BUTCHER COMPANY • San Francisco • Los Angeles • Seattle • Portland Salt Lake City • *In Canada:* Hoffmann-La Roche Ltd., 286 St. Paul Street, West; Montreal, Quebec

Reprints of this advertisement in 8½" x 11" size are available on request. These can be used in the new Roche loose-leaf catalog, or in any standard 3-ring binder.

Advancing Therapy

Aerosol OT for Constipation

A synthetic wetting agent, dioctyl sodium sulfosuccinate (Aerosol O. T.), has been used extensively on the University Hospital clinical services for the past 12 years by J. L. Wilson and D. G. Dickinson (*J.A.M.A* 158:261, 1955) in the treatment of constipation in many different types of patients, including those severely distressed with fecal impaction associated with megacolon, anal fissure, post-operative anal atresia, and in bedridden patients of many types, including patients convalescing from poliomyelitis and some elderly invalids. In mild and moderate forms of chronic constipation this material has been found to be effective by itself. It is also exceedingly useful combined with mineral oil in the early treatment of the most severe constipation. Experience with many hundreds of cases failed to reveal any evidence of toxicity of any sort. A limited number of absorption studies have indicated that dioctyl sodium sulfosuccinate has no dependable and probably no significant effect upon fat or protein absorption from the intestine. Dioctyl sodium sulfosuccinate has wide usefulness in the treatment of constipation because a good therapeutic effect can be obtained without the danger of toxicity or decreasing effectiveness even when used regularly for indefinite periods of time.

Viadril-Steroid Anesthetic

A completely new concept of anesthesia has been introduced with the discovery of Viadril, the first steroid to be used successfully for surgical anesthesia in man.

This discovery and development was reported by three Pfizer scientists, Drs. G. D. Laubach, S. Y. P'An and H. W. Rudel, who conducted experimental research producing anesthesia in animals with intravenous injections of the drug.

The drug proved generally less toxic than intravenous anesthetics currently in use. The steroid also is reported to have the advantage of producing a relatively low degree of respiratory depression and rapid uncomplicated recovery with minimum post-anesthetic side effects.

This finding was borne out by a paper delivered before the International College of Surgeons in Geneva (Switzerland) by Dr. Gilbert S. Gordan, Jr., associate professor of medicine of the University of California School of Medicine in San Francisco. It covers initial clinical research carried out by Dr. Gordan and his colleagues, Drs. Neri Guadagni, Joseph Picchi and J. E. Adams.

A second report presented at Geneva by Dr. Frank J. Murphy, described the successful use of Viadril in 130 operations, involving 20 surgical procedures.

A product patent for Viadril and related compounds was granted to Pfizer by the U. S. Patent Office on May 17. Patent applications on the product have been filed in major countries throughout the world.

Reducing Cholesterol Blood Levels

According to a study reported by J. Pomeranze and M. Chessin (*Am. Heart J.* 49:262, 1955), sitosterol, a Jerusalem artichoke preparation, polysorbate 80—choline—inositol complex, eggplant, Tween 80, pancreatin concentrate, ion exchange resin and vitamin E all produced little or no effect on serum cholesterol levels in over 50 cases. The evaluation of therapeutic agents in atherosclerosis on the basis of altering serum cholesterol levels is therefore questionable.

Prednisone in Rheumatic Diseases

Prednisone (Meticorten), a new synthetic crystalline steroid hormone, was given orally by J. R. Dordick and E. J. Gluck (*J.A.M.A.* 158:166, 1955) to 12 patients with active rheumatoid arthritis and one patient each with disseminated lupus erythematosus, active rheumatic carditis, and acute gouty arthritis with superimposed tophaceous lesions. The suppressive dose ordinarily was 30 mg. daily; the maintenance dose ranged from five to 20 mg. daily. With this dose, optimal subjective and objective benefits have been achieved, showing that prednisone is an effective antirheumatic and anti-inflammatory agent.

Electrolyte studies of the serum and urine demonstrated no significant sodium retention or potassium depletion in 14 patients. Salt-loading studies in four cases confirmed this conclusion The side-effects of prednisone therapy were transient, reversible, and not serious.

Although cortisone, hydrocortisone, and prednisone are qualitatively identical in suppressing active rheumatoid arthritis, prednisone is quantitatively superior and free of significant metabolic, water, or electrolyte disturbances. Milligram for milligram, prednisone is about four to five times more potent than cortisone or hydrocortisone.

Reserpine for Psychotics

Reserpine according to Barsa and Kline (*J.A.M.A.* 158:110, 1955) is definitely of value in the treatment of chronically disturbed psychotic patients. Twenty-two per cent of a group of 200 such patients have improved sufficiently to be judged well enough to leave the hospital. Eighty-six per cent of the patients showed some degree of improvement, and 71 per cent did better with reserpine therapy than with electroshock. Although certain toxic effects of reserpine (including Parkinsonism and convulsions) were observed in the treated patients, none of these were permanent; all of them disappeared when the dosage of reserpine was reduced. There is evidence to indicate that in some patients the therapeutic effect of reserpine last only as long as the drug is being administered; however, in 78 per cent, improvement has been maintained after medication was discontinued.

Q Substance

Discovery that cancer patients have too little of a blood substance called "Q" has been announced by Allen F. Reid, biophysicist, and his associates at Southwestern Medical School of the University of Texas, Dallas. "Q," so far not otherwise identified, acts "as a brake on the transport of stored energy from one part of the body to another." Because of a "Q" deficiency, "vital energy is transported at reckless rates and spent lavishly on the building and operation of useless cancer cells." It has not yet been possible to isolate enough "Q" to determine whether or not it might have any effect as a treatment for cancer.—*Science* 121:155, 1955.

LAUTIER FILS

"A Standard of Quality Since 1795"

GRASSE, FRANCE

Essential Oils

Natural Flower Absolutes

Concentrated Natural Fixatives

Synthetic Aromatics

LAUTIER FILS, INC.

321 Fifth Avenue, New York 16, N. Y. • 874 North Wabash Avenue, Chicago, Ill.

GRASSE PARIS LONDON BEYROUTH ST. LOUIS SANTIAGO

Gout Treatment

The use of H.P.C. (3-hydroxy-2-phenylcinchoninic acid) in the treatment of rheumatoid disorders, coupled with its chemical relationship to cinchophen, suggested to Ross (*Brit. med. J.* 1954, 2, 782) that the compound might be of value in patients suffering from gout. He reports the case histories of 12 patients suffering from typical gout, who were treated with tablets containing H.P.C. The dosage began with either 2g. or 1.5g. daily and was later adjusted according to the patient's response.

In the treatment of acute gout H.P.C. proved particularly effective, often causing an immediate improvement in the patient's condition. Although no major toxic reactions to the drug were observed, minor reactions (in particular skin rashes) occurred quite frequently, and the author suggests that H.P.C. should not be used for maintenance therapy, but should be given only for the treatment of acute attacks of gout.

Hyaluronidase for Arthritis

After subcutaneous injections of hyaluronidase over the affected joints by Rossing and Lutterbeck (*Rheumatism* 10:76) 53 out of 83 patients obtained significant subjective and objective improvement in their joint condition. In 27 of these patients there was complete relief of symptoms. Sixteen had slight improvement, and 14 were unchanged. Therapeutic results were particularly good in osteoarthritis, acute infective arthritis, and toxic rheumatoid arthritis, while those in rheumatic fever and rheumatoid arthritis were less impressive. The pathogenetic mechanism that seems most logical in view of these results and studies is that local disturbances of synthesis and degradation of hyaluronic acid and of the equilibrium between substrate and enzyme are causally related; these may be favorably influenced by local hyaluronidase therapy.

Piperazine Citrate for Roundworms

Piperazine in various forms has been used by French workers for the treatment of ascariasis. More recently, White (1954) has used a syrup containing piperazine hydrate and citric acid, for the treatment of three children with roundworm infection. O'Brien (1954) used piperazine adipate in the treatment of two cases of ascariasis in children, giving 0.3 g. of the drug twice daily for several days. In view of White's results and reported absence of toxic side-effects, it seemed likely that a single-dose treatment would be effective, and for this purpose tablets of piperazine citrate were prepared for use in East Africa. A syrup is a convenient vehicle for the administration of the drug to children, but it was thought that a tablet preparation would be more suitable for the treatment of adult populations overseas.

Piperazine citrate was found to be effective by Goodwin and Standen (*Brit. Med. J.* 1332, 1954) in removing roundworm from the gut when given in a single dose. The results indicate that a dose of 3 g. should be given to all except children weighing less than 20 kg.; small children should be given 2 g. No toxic side-effects were observed.

The worms were narcotized by the drug and not killed; they recovered in a few hours when placed in Ringer's solution at 37° C. No effect was observed against hookworm or *Strongyloides*.

Aldosterone

Treatment of a case of Addison's disease (adrenal cortical hypofunction) with aldosterone, the new salt-regulating hormone recently isolated under the name of electrocortin, has been described by Professor A. Kekwick and Dr. G. Pawan of London (*Lancet* 2:164, 1954). They regulated the oral dose to maintain the patient in reasonable electrolyte balance, the most noticeable effect being on the sodium output. The glucose tolerance test was improved, the skin pigmentation diminished, the blood pressure was raised, and there was a fall in eosinophils in the peripheral blood. Orally administered aldosterone appeared to be about 30 times as active as intramuscular injections of desoxycorticosterone acetate in maintaining sodium balance.

Dilatol Vasodilator

The effects of Dilatol (1-[*p*-hydroxyphenyl] - 2[1′ - methyl - 3′ - phenyl propylamino] - propanol) hydrochloride were observed by A. G. Riddell, M. Steel and J. M. McCoy (*Angiology* 5: 314, 1954) after the administration of 10 mg. orgally or 5 mg. intramuscularly to 20 normal men between the ages of 20 and 35 years. Independently of the route of administration, Dilatol produced a drop in blood pressure with little effect on the pulse rate. There was practically no change in the systolic blood pressure, but the diastolic pressure fell considerably, so that the pulse pressure was increased. No evidence was obtained from these experiments that the main effect of Dilatol is on the muscle vessels, rather than on the skin vessels, in contrast to the observations made by other workers on the dog. Dilatol has been used extensively in Germany for the treatment of hypertension and peripheral vascular disease and has been favorably reported on. It is a safe vasodilator substance that acts rapidly and regularly when administered orally.

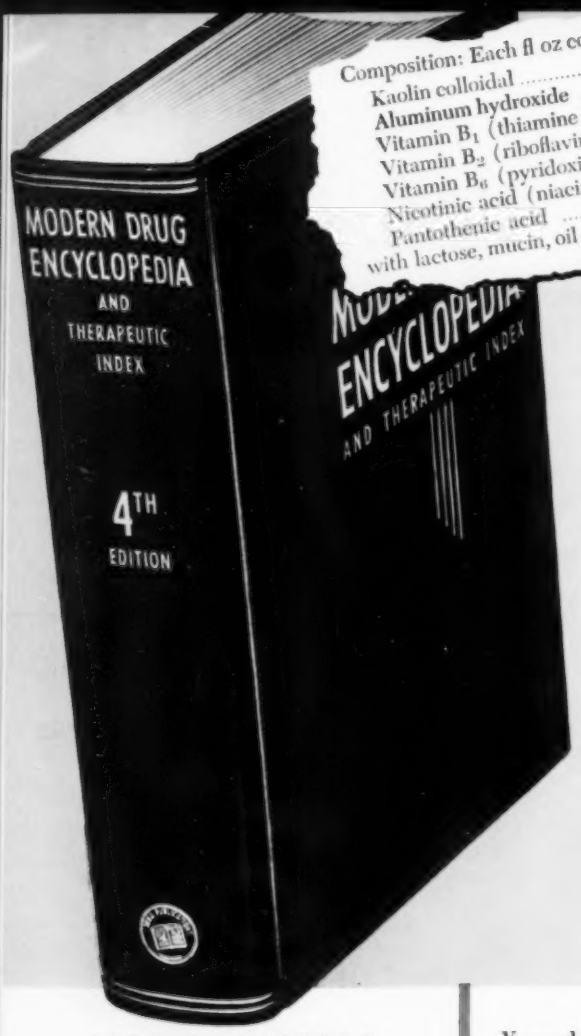
Clupanodonic Acid for Tuberculosis

Clupanodonic acid (Clupadene), which is a good adjuvant in the treatment of pulmonary tuberculosis in adults, proved especially beneficial in the treatment of primary tuberculosis. Durigato and Cremonina (*Gazz. med. ital.* 113:198, 1954) treated 12 girls with primary tuberculosis with the drug and obtained good results not only on the general condition but also on the specific tuberculous process. The treatment was well tolerated. Best results were obtained in patients with epituberculous infiltration, which disappeared quickly. The Mantoux test in these patients indicated that the drug's main influence is on the tuberculous allergy. In view of this, clupanodonic acid may prove useful when combined with antibiotics and chemotherapeutics; these have a direct action on the tubercle bacillus, while the acid acts on the tuberculous allergy modifying it and may potentiate the specific action of the aforementioned drugs. Because of its particular preparation, clupanodonic acid may also be used as an excipient and a solvent for streptomycin.

Long Acting Testosterone Compound

In castrated young male rats a single subcutaneous injection of 20.8 mg. of testosterone propionate (in olive oil) produced a marked increase in the weight of the seminal vesicles which reached the peak in about 10 days. A similar injection reported by Feyel-Cabanes (*Compt. rend. soc. biol.* 148: 1196, 1954; through *C.A.*) of the same quantity of testosterone in the form of 24.1 mg. of teststerone hexahydrobenzoate produced nearly three times as great an increase in the seminal vesicles with the peak occurring about 31 days after the injection. The enlargement of the hypophysis which ordinarily follows castration was totally prevented by the hexahydrobenzoate for at least 31 days. Kidney action was negligible.

THE UNIVERSITY LIBRARIES OF GEORGIA



Composition: Each fl oz contains:

Kaolin colloidal	6.45 Gm (gr 96)
Aluminum hydroxide	0.778 Gm (gr 12)
Vitamin B_1 (thiamine hydrochloride)	0.3 mg (100 U.S.P. units)
Vitamin B_2 (riboflavin)	0.02 mg
Vitamin B_6 (pyridoxine)	0.3 mg
Nicotinic acid (niacin)	4.0 mg
Pantothenic acid	0.55 mg

with lactose, mucin, oil of peppermint.

Description: A colloidal cream of 6.5% **aluminum hydroxide**, with magnesium trisilicate 0.486 Gm (gr 7½) in each 4 cc teaspoonful; flavored with peppermint.

Description: A palatable, mint-flavored colloidal suspension of **aluminum hydroxide**, free from sugar or alkalies.

Composition: Each teaspoonful of liquid contains (approximately) magnesium trisilicate 0.5 Gm (gr 1½); **aluminum hydroxide** 0.449 Gm (gr 6.9). (or 6.825 Gm (gr 105) aluminum hydroxide gel).

Composition: Each fl oz contains magnesium trisilicate 3.89 Gm (gr 60) and **aluminum hydroxide** 1.94 Gm (gr 30).

NOW...
Baker offers you high purity
ALUMINUM HYDROXIDE
Wet Gel Concentrate

***SPECIFICATIONS**

Test	*Baker*
Assay (as Al_2O_3)	10.0–13.0%
Description	To Pass Test
Identification	To Pass Test
Reaction	To Pass Test
Acid-Consuming Capacity (cc N/10 HCl/gm 10% Al_2O_3)	53.0 Min.
Chloride (Cl)	0.28%
Sulfate (SO_4)	0.05%
Arsenic (as As_2O_3)	0.00008%
Heavy Metals (as Pb)	0.0005%

**Based on relevant U.S.P. requirements*

Your pharmaceutical product deserves a superior, high-purity Aluminum Hydroxide Wet Gel—one that will protect your formulas and trademark.

Now, Baker is proud to provide you a dependable source for this product. You will immediately recognize the high purity of Baker concentrated Wet Gel, because even the undiluted concentrate meets relevant U.S.P. tests for the diluted Gel.

This outstanding quality is the direct result of the Baker methods for precise manufacturing control. This step by step supervision results in a gel with the reaction speed and high acid-consuming capacity needed to safeguard the therapeutic efficiency of your product.

This new wet gel is an important companion-product to the Aluminum Hydroxide Dried Gel we have provided to leading pharmaceutical manufacturers for years.

Try Baker concentrated wet gel . . . see the job it will do for you in your own formulations, using your own manufacturing techniques. Samples for your evaluation are available upon request. Remember . . . it pays to buy Baker!

J. T. BAKER CHEMICAL CO.
Executive Offices, Phillipsburg, New Jersey

Baker CHEMICAL

Baker Chemicals
REAGENT • FINE • INDUSTRIAL

OTHER IMPORTANT REASONS FOR CHOOSING BAKER CONCENTRATED ALUMINUM HYDROXIDE WET GEL:

Uniform viscosity on dilution
. . . this aids in insuring uniform pouring characteristics for your product.

Chemical assay
. . . each drum of Baker concentrated Wet Gel has the exact assay shown on the label.

Superior suspension properties
. . . when the concentrated Aluminum Hydroxide Wet Gel is diluted, little or no separation upon standing is observed.

Practical, protective packaging
. . . Baker concentrated Wet Gel is packaged in non-returnable steel drums with phenolic baked lining, plus polyethylene liner.

Perfumer's Shelf

Perfuming Aerosols

Before aromatic chemicals or essential oils are utilized in an aerosol formulation, they should be tested to determine their solubility in the propellant which may be used, and their compatibility with the other ingredients which will make up the finished aerosol. Most of the resins are insoluble, as are the balsams, but these materials can be replaced, in most cases, with solvent extracted oils of the insoluble products. Certain essential oils that contain waxes and resins can be replaced with terpeneless oils. These substitutes would usually be completely satisfactory in the aerosol product.

Furthermore, perfume compounds formulated originally for other applications, have to be completely revised for use in aerosol products. When smelled from a bottle or a blotter, these materials produce an olfactory stimulus entirely different from the scent obtained after the fragrance is incorporated into an aerosol bomb. The individual notes can be easily obtained from the bottle or blotter during the different stages of drying. However, when the material is sprayed under pressure, complete dissemination of the entire perfume compound is accomplished in an instant.

It is important to remember that the same perfume composition may have a different note when sprayed at different pressures and from different valve openings. By the use of a different propellant or other raw materials, a different reaction may be obtained with the perfume compound.

When formulating perfumes for aerosol products, no irritating essential oils or aromatic chemicals may be used. Due to the very fine spray and particle size, materials which would be only slightly irritating under normal use conditions, become highly irritating when sprayed in aerosols.

A complete study of the entire make-up of an aerosol container is absolutely essential. The perfume compound acts as an indicator in the event of any incompatibility. Concentrations of perfume oils are relatively low in aerosol containers in comparison to other mediums. Thus, any decomposition that takes place would have the tendency to cancel out the perfume oil or drastically change its character.

After all these problems have been taken into consideration, the entire aerosol should be shelf-tested. The shelf test is irreplaceable in the study of an aerosol, such a test should be conducted under normal storage conditions for a period of at least six months. If the material has remained stable during that period of time, there is reasonable assurance that it will not deteriorate over a longer period. The shelf test should be conducted simultaneously with an accelerated test at a higher temperature, for which 53° C. for a period of one month has been found to be satisfactory.

Most of the colognes and perfumes packaged in the uncoated glass bottles use Freon 114 as the propellant. This gas has a pressure of approximately thirteen pounds per square inch at room temperature. Most essential oils, aromatic chemicals and other perfume materials are insoluble in this propellant. It is, therefore, necessary to use alcohol as a co-solvent to solubilize the perfume compounds. Enough alcohol must be used to insure solubility. If too much alcohol is added to the solution, the spray pattern of the entire container is affected, resulting in a stream of solution rather than an aerosol cloud. The usual mixture for a product of this type is one per cent perfume oil, nine per cent alcohol, and 90 per cent Freon 114. A certain amount of Freon 12 may be added to insure a proper spray. Care must be taken that the over-all pressure of the container does not exceed fifteen pounds per square inch.

Perfumes and cologne solutions which are packed in coated bottles usually contain 65 per cent of an alcoholic solution, which consists of alcohol and perfume oil, and 35 per cent propellant. The 35 per cent propellant is a 60-40 mixture of Freon 114 and Freon 12 or Genetron 101. Although the pressure of this container is approximately twenty-five pounds per square inch at room temperature, it gives a much wetter spray due to the alcoholic concentration. This type of formulation is suitable for antiperspirants, deodorants and colognes where a wet spray may be desirable. However, the flammability aspects of this type aerosol must be considered, depending upon the type of propellant, and the concentration of water which the formulation may incorporate.—*V. Di Giacomo.*

Intravenous Flavor

Sometimes an unpleasant taste in a pharmaceutical preparation cannot be masked. Let me cite a basis for this belief, follow it with a possible example and we can draw our conclusions together. An extremely bitter compound, sodium dehydrocholate, is used to check the velocity of blood flow. The method is very direct: 3 to 5 cc. of a 20 per cent solution is injected into a vein in the forearm of a patient lying down. The time is then recorded from the beginning of the injection to the *perception of a bitter taste*. The reported normal range extends from eight to 18 seconds. This means, in brief, that a bitter component in the blood stream affects the nerves, from the backside, that normally receive impulses from the overlying taste buds.

A complaint that often follows the use of an oral penicillin preparation is the bitter after-taste. This may be thought to be due to incomplete flavoring of the very bitter penicillin, but it may very well be due to the absorption of the drug into the blood stream followed by action on taste buds from within. (Sweetness is often useful in helping to mask bitterness, but in working with an antibiotic preparation, I found that most of the bitterness was due to the use of excessive proportions of the synthetic sweetening agent). I cannot document the statement I have occasionally encountered that a bitter taste sometimes follows the injection of penicillin. In any event, the concentration of the bitter substance in the blood must be great enough and per-

Beat Competition with Better Compounds

W. J. BUSH & CO., Inc.

Essential Oils

19 West 44th STREET, NEW YORK 36, N. Y. • MUrray Hill 7-5712

POLAWAX is a non-ionic, self-emulsifying wax of the oil-in-water type and is an easily manipulated product giving extremely stable emulsions with all types of oils, waxes, strong electrolytes, chlorinated naphthalenes and similar chemicals. Send for booklet giving full details and suggested formulae.

Croda

New York
London
Milan
Manchester
Bradford

Croda Incorporated, 51 Madison Ave., New York 10, N.Y. Tel: Murray Hill 3-3089

sistent enough, before the taste can be evoked.

The use of a flavoring agent that will accompany the medicament into the blood stream has many disadvantages, not the least of which are lack of such flavoring agents and ignorance as to whether the same flavor sensation would result from two different avenues of approach to the taste buds. Continued studies in the physiological basis of taste may eventually offer one or more clues; meanwhile, the problem, although present, is an interesting one, but not of currently pressing importance.

Perfumery Esthetics

What are the artistic precautions required in adapting an odor to a line? To see that the theme exists in fact as well as in name—that the desired odor actually develops and is recognizable. To see that a heavy odor is lightened and freshened when intended for use in a highly functional cosmetic. To attain, within the cost limits circumscribed by management, the quality of the parent odor. To dictate the concentration of perfume, keeping the volume of odor at an attractive level.

These aims can be realized with but one approach. The perfumer must not just woodenly substitute in the framework of the original formula. After establishing those materials which are stable and persistent in a given medium, he must recreate the odor; rebuild it with a constant awareness of the varying accent of his raw materials in different bases.

To begin with, does the odor lend itself to the product? Certain heavy odor types, say Gardenia, or Heliotrope, or Amber, are completely unsuited to many functional products. The wise manufacturer will see this and realize that the functional product must have a fragrance in harmony with its end use. Perhaps drastic changes must be made so that the unsuitable theme odor is but a fraction of the final perfume blend. If the chosen odor must be modified out of all proportion to suit the physical and chemical demands of a preparation, it is better to abandon it for an odor which can be maintained with artistic integrity. When adjustments are made to suit a given base, the criterion for excellence is not only adherence to the theme, but also whether the final effect has charm, beauty and elegance. In short, the odor must be *good*. In a well perfumed product, the scent does not stand apart but is an integral unobtrusive ingredient of the preparation.—*C. F. Wight.*

Perfuming Powders

These products require a low priced fragrance oil, with great stability towards oxidation and polymerization. The immense surface area of exposure offered by powders, and the alkalinity of their vehicles, favor both these chemical reactions, which can be highly destructive to an odor. The essential oils develop terpene-type rancidity odors. Aldehydes are destroyed either by oxidation or polymerization. Eugenol and Vanillin develop discoloration in contact with the alkaline surfaces and air. These are only a few of the difficulties encountered among the powder products.

Bath Salts

Bath salts pose the same general problems of odor stability as powders but on a more intense scale because of their strong alkalinity. This higher alkalinity promotes actual hydrolytic destruction and intensifies the discoloration tendency of the Eugenol-Vanillin type. Until recently bath salt fragrances were often virtual skeletons of the parent perfume type because so many offending chemicals had to be removed or compromised in order to produce a fragrance oil that would show stability under the rugged conditions of these bath salts.

Today there is an interesting bit of research going on to improve bath salt fragrance oils. It uses the principle of the new "locked in" flavor powders. The fragrance oil is "sealed" into granules of soluble gum by a spray drying technique. These granules are then mixed with the bath salts in such a proportion that their oil content is in the normal application ratio to the salts. Thus the fragrance oil is protected in a sealed gum granule until this granule is dissolved in water. Preliminary work shows remarkable success with the modern aldehydic fragrances, which are ordinarily impossible to hold in a bath salt for any length of time.

Cosmetic Emulsions

This is an intricate field. The perfumer is extremely limited in the number of raw materials available for cosmetic fragrance oils because of the great number of restrictions imposed by irritation, allergenic reaction, and discoloration in the production of a cosmetic product. The result is that the greatest artistic compromise of the whole line is made in the cosmetic fragrance oils. If the parent perfume fragrance is recognizably floral, then this simple fragrance is often used for perfuming the cosmetic, with no attempt to pick up the line character.

Cosmetic preparations often show a tendency to distort the character of a fragrance. This is frequently true of the non-alcoholic type lotions of colloidal nature.

For these emulsions a fragrance oil must be designed chemically to distribute itself between the surfaces of the oil droplets and the water phase. If any ingredient of the fragrance oil tends to concentrate, by dissolving in the oil phase of the droplets, then this part of the odor is locked up, and the overall perfume effect altered by its withdrawal. Jasmin types, heavily based on benzyl acetate show this phenomenon quite often.

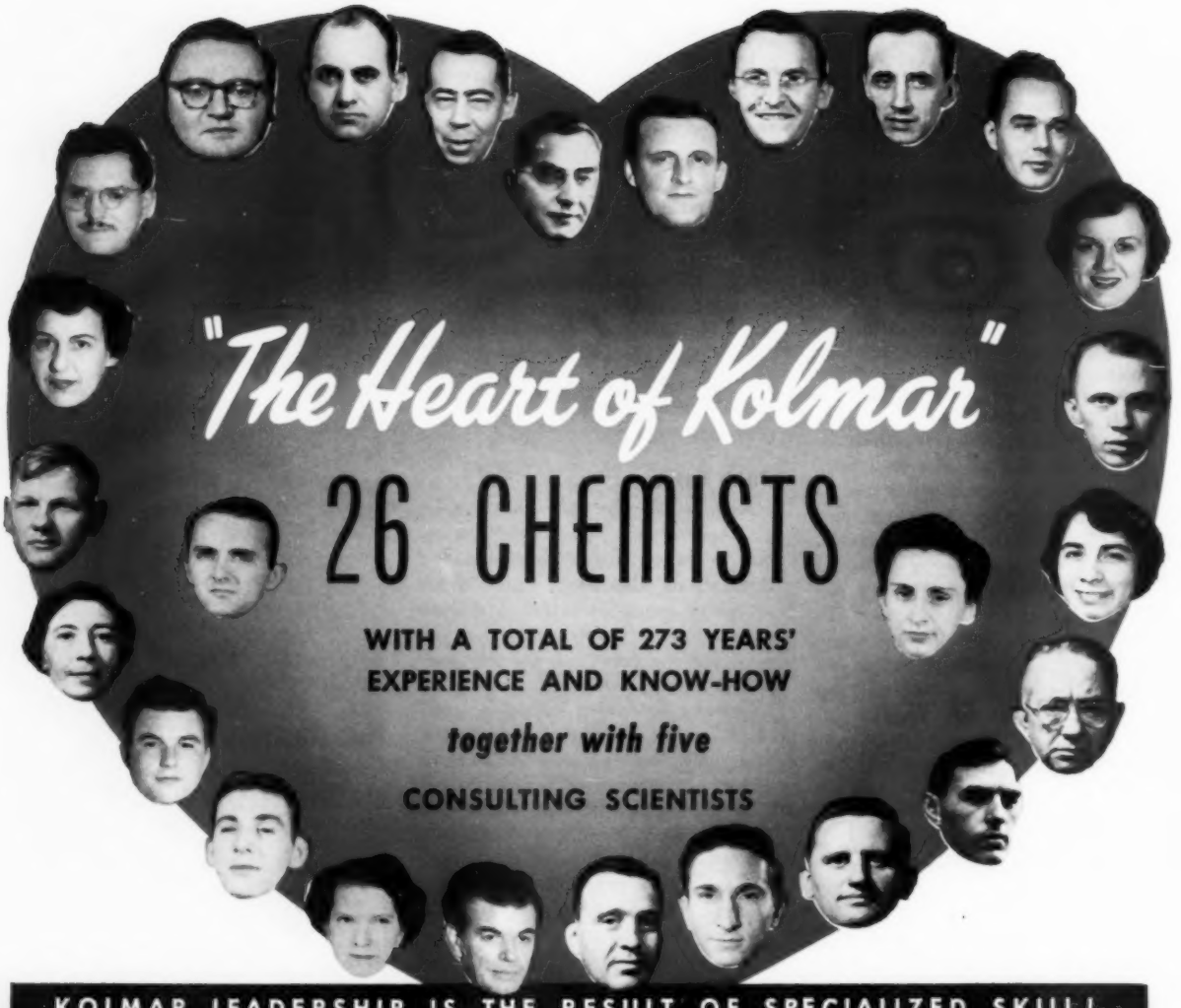
The fair distribution between the two phases must be brought about by adjustment of the chemical properties of the fragrance oil itself. It cannot be brought about by special dispersing agents, as these materials may disturb the characteristics of the coll id itself.

Convallarys

A versatile new perfume specialty . . . CONVALLARYS . . . has just been developed by the D&O Laboratories. Particularly well suited for incorporation in aerosol products, CONVALLARYS blends with many compositions, imparting a fresh lift and body without dominating the compound. Shelf-tested in the D&O Aerosol Testing Laboratories in Glass Aerosol Colognes, the specialty has proved to be clearly soluble and its odor completely stable in the concentrate/propellent system.

Perfuming Shampoos

The design of fragrance oils for Shampoos is patterned approximately after the cologne types, to give as much rise or lift as possible. If the shampoo base is an emulsion type, difficulty is frequently encountered by the tendency of the colloidal system to selectively depress certain aromatic chemicals in a fragrance oil. This unbalances the fragrance, producing either a distortion of odor type, or worse—a reduction in the lift of the fragrance effect. It is interesting to note that quite often this difficulty may be corrected by the addition of as little as five per cent of a polyhydric alcohol-ether such as dipropylene glycol. Apparently this glycol has the ability to preferentially increase the solubility of many aromatic chemicals in the water phase of the emulsion.


"The Heart of Kolmar"
26 CHEMISTS
WITH A TOTAL OF 273 YEARS' EXPERIENCE AND KNOW-HOW
together with five
CONSULTING SCIENTISTS

KOLMAR LEADERSHIP IS THE RESULT OF SPECIALIZED SKILL!

♥ The "Heart of Kolmar" provides continuous creative research and thorough testing at every step of the manufacturing process . . .

♥ It provides the control of quality from raw material to finished product . . .

♥ It has given Kolmar product superiority and uniformity, combined with favorable price . . .

♥ It has enabled Kolmar to develop many of the best known products in the cosmetic field . . .

♥ It constantly works for the improvement of existing methods and formulae, and the development of new ones.

♥ It has won Kolmar recognition *as America's Leader in Private Label Cosmetics.*

The customer's rights in the formula under which he operates is always respected by Kolmar. Consultation will not obligate you and there's a Kolmar Laboratory or Representative near to give you prompt service at all times.

•

Kolmar Products include Lipstick, Dry and Cream Rouge, Loose Face Powder, Cake Make-Up, Compact Powder, Foundation Creams, Liquid Make-Up, Eye Shadow, Mascara, Lotions, Colognes, Perfumes and other cosmetics.

•

REPRESENTATIVES: DOUGLAS HAGGERTY; THOMAS LA PRELLE, EASTERN SALES MANAGER, EMPIRE STATE BLDG., ROOM 605, NEW YORK, N. Y.; WARREN M. CURRY, 599 PLUM ST., N. W., ATLANTA, GA.; NORMAN L. KOLE, 505 NORTH LA SALLE ST., CHICAGO, ILL.; J. C. WEILER, 8003 FORSYTHE BLVD., ST. LOUIS 5, MO.; R. F. G. BYINGTON, 1260 N. WESTERN AVENUE, LOS ANGELES, CALIF.; RICHARD F. SPICKER, 419 W. FIFTH ST., CINCINNATI, OHIO; ELMER J. SCHWARTZ, 10016 EAST 35TH TERRACE, KANSAS CITY 3, MO.

Kolmar LABORATORIES

MILWAUKEE 2, WISCONSIN

PRIVATE LABEL COSMETICS EXCLUSIVELY

KOLMAR COSMETIC SPECIALTIES, INC. (complete package division) • KOLMAR INTERNATIONAL, INC. • WICKHEN PRODUCTS, INC.

PLANTS IN PORT JERVIS, NEW YORK; TWO PLANTS IN MILWAUKEE, WIS., AND ONE IN HOLLYWOOD, CALIF.
CANADA: KOLMAR WILCKENS, LTD., PLANT IN BARRIE, ONTARIO; OFFICE: 205 YONGE ST., TORONTO, ONT.
AUSTRALIA: KOLMAR (AUST.) PTY. LIMITED, 494 KENT ST., SYDNEY; KOLMAR EUROPE: PARIS, FRANCE

Skin Research

Changes in pH of Sweat

F. Herrmann and L. Mandol (*J. Invest. Dermatol.* 24:225, 1955) studied the changes in the pH of sweat caused by various types of stimulation. The pH of sweat samples and of the skin surface of 19 healthy subjects was examined electrometrically as well as by means of a universal indicator after different forms of sweat stimulation. Any changes obtained resulted in increased pH values. The highest values were observed in areas in which local sweating was induced by intradermal, or shallow subcutaneous injections of pilocarpine or acetylcholine, cholinergic drugs.

Exposure to dry heat for a short time produced little or no pH rise in the sweat of male subjects, but in female subjects a distinct rise was noted. Prolonged thermal stimulation produced a gradual rise even in male subjects and a strong rise in females. Sweat caused by muscular exercise did not have an elevated pH value. The actions of heat and drug stimulation were independent, so that heat did not cause a drop in the pH elevation due to drug stimulation.

Atropine counteracts the action of the cholinergic drugs, so that previous intracutaneous injection prevents the pH rise that should be caused by the injection of pilocarpine or acetylcholine.

The increased pH of sweat caused by drug stimulation is not due to increased activity of the apocrine glands, but there is evidence that the pH changes were primarily due to the pH of eccrine sweat. Preliminary studies suggest that more glycogen may break down in the sweat coils and more lactate may form after stimulation of sweating by pilocarpine than after heat stimulation—which may be related to the shift toward alkalinity in response to the drug.

Comment: We have some ideas concerning the formulation of a true antiperspirant that will temporarily, and harmlessly, stop perspiration at its source, and this paper tends to confirm our working hypothesis. At present there is some controversy as to whether or not any intended antiperspirant actually stops perspiration; if the sweat duct outlets in the skin can be closed to prevent the release of sweat, prickly heat eruption may result. If safe drug action, by topical application, is possible, this may be an important physiological approach to antiperspirant action.

Nail Brittleness

In an attempt to relate nail brittleness to calcium content, R. L. Kile (*A.M.A. Arch. Derm. and Syph.*, 69:75, 1954) concluded that no consistent variation in the calcium, phosphorus or total ash content was found among nails, callus and cow hoof. The study produced no evidence that brittleness and hardness of nails are related to their calcium or phosphorus content.

A group of 1,152 women were questioned as to the brittleness of their nails. Thirty-four per cent stated their nails were brittle. Silver and Chiego reported housewives had an incidence of brittleness of 45.2 per cent. It is interesting that in the 20 to 30-year-old-group, housewives have the lowest incidence of nail brittleness of any group, including clerks, secretaries and factory workers. As for the cause of nail brittleness, many factors were considered, such as iron metabolism, presence of fatty acids, occupation, nail lacquers, insufficient vitamin intake, pH of the skin and hormonal status.

S. C. Wray, in the discussion of the paper, mentioned that the water content of keratins varies from 10 to 30 per cent, and nail brittleness may depend in part upon the ability of the nail substance to absorb and hold water. Nail brittleness is more pronounced in winter than in summer.

J. V. Klauder considered that the lay person is confused in an analogy between the hardness of bone and nails in relation to the calcium content of bone. The mineral content may not be at all involved in brittle or soft nails. A better lead might be in the search for a cement substance in the nail plastic.

V. Fardo-Castello contributed the observations that most of the brittle nails are found among women and also among men who do no manual labor but who wash their hands a good many times a day and use chemicals. The lipid content of the skin is important as concerns dryness and this may also be the case with nail. Washing or solvents may remove the protective lipid content which prevent loss of moisture.

Skin Enzyme

Observations by W. B. Shelley, S. B. Cohen and G. B. Koelle (*J. Invest. Dermatol.* 24:561, 1955) indicate the wide-spread occurrence of yet another enzyme in the skin. Monoamine oxidase appears to be associated chiefly with the epidermal cells and their derivatives, sebaceous and sweat glands. In the secretory cells of the sweat glands the enzyme appeared in granular form, which in the eccrine gland may represent the mitochondria. This enzyme may be partly responsible for the ammonia which appears in eccrine sweat since it is liberated by oxidative deamination of primary amines. It is also possible to speculate that this enzyme may be related to the appearance of colored apocrine sweat, i.e., chromidrosis. The oxidation of tryptamine or 5-OH-tryptamine, can lead to the formation of a dark pigment. Thus, in the presence of tryptamine, or other chromogenic amines, the apocrine secretory cells may form such a pigment which then could color the small volume of apocrine sweat produced. In the eccrine gland a similar pigment formation might also take place, but no color would be expected because of dilution.

Hormones and Sebaceous Glands

Suspensions of estradiol benzoate and of testosterone propionate in an ointment composed of 40 per cent Carbowax 1500 and 60 per cent propylene glycol were applied to the shaved skin of mice by C. Lapiere (*Dermatologica*, 109:345, 1954) daily for seven or fourteen days. The estradiol caused a decrease in the cross-sectional area of the sebaceous glands, the effect being of similar magni-

AMERICAN AROMATICS, INC.

Telephone
GR. 7-6313

24 East 21st St.
New York 10, N. Y.

ROSE EXTENDERS

This message is directed to purchasing agents and perfumers who have a really rugged price-control problem for their rose compounds:

The citronella derivatives have so advanced in price that these products have become a serious problem in any formula tied to a rigid cost. Naturally, efforts are made to use the less desirable fractions of Citronella and also products which are completely synthetic. Needless to say the result is a general increase of the chemical and cold notes which must be corrected.

Toward the solution of this problem, American Aromatics has developed a series of ROSE EXTENDERS to fit any cost situation.

SAMPLES ON REQUEST

AMERICAN REPRESENTATIVE OF
SYNAROME PRODUCTS

NEW Bulk Label-Coder Imprints 5* Legends in 1 Impression

*more or less, depending on need

New Model "C" CORLISS-CODER

- Fully automatic ... self-stopping
- Adjusts for die-cut or rectangular labels from 1"x¾" to 5½"x3"
- Delivers imprinted labels in perfect stack
- Foolproof ... cannot "skip" or jam
- Maximum production at lowest cost

Now, with this new Model "C" CORLISS-CODER, you can imprint code, expiration date, lot number, size, quantity, flavor and other changeable legends in a single bulk run... automatically. This compact bench machine handles a full hour's capacity of labels without requiring operator attention... affords extremely clean, sharp imprints consistently... takes only 10-minutes for changeover to different label sizes, less for copy changes.

Write, wire, phone for more details

Gottscho — ADOLPH GOTTSCHO, INC. — Dept. C, Hillside 5, N. J.

Automatic CODING, MARKING, IMPRINTING MACHINES

In Canada: RICHARDSON AGENCIES, LTD., Toronto & Montreal

RICO

OLD WORLD FRAGRANCES

WITH NEW WORLD INGENUITY

Dr. Alexander Katz Co.
division of
F. RITTER & CO.
Los Angeles 39, California
Branch Offices in Principal Cities

DEPEND ON
HALBY
FOR TOP QUALITY IN
THIOGLYCOLATES
Tailored to your individual needs:

- Extracted Ammonium Thioglycolate
- Distilled Thioglycolic Acid
- Calcium Thioglycolate
- Custom-made Esters and Derivatives of Thioglycolic Acid

We invite your inquiries

HALBY PRODUCTS CO.
WILMINGTON 99, DELAWARE

SALES REPRESENTATIVES:
Stanton Sales Co., 40 E. 40th St., New York 16, N. Y.
McNerney Chemical Corp., Los Angeles 23, Cal.
V. & S. Morch, 6346 MacDonald Ave., Montreal 29, Que.

tude in both sexes, while the testosterone treatment caused increases in the size of the sebaceous glands, with males showing greater response.

Treating Seborrheic Dermatitis

A scalp lotion containing a new compound, Vancide 89, and a quaternary, Phemerol, is being marketed under the trade name "Sebb" for treating seborrheic dermatitis and has been found to have a high degree of effectiveness. The lotion contains 0.085 per cent of the Vancide and 0.060 per cent of Phemerol to broaden the bactericidal scope of the preparation. Vancide 89 is N-trichloromethylmercapto - 4 - cyclohexane - 1,2 - dicarboximide, used as an agricultural fungicide under the name of Captan.

Of the 98 cases of seborrheic dermatitis treated by F. I. Ball (*A.M.A. Arch. Dermatol.* 71:696, 1955) there were 28 classified as severe, 52 moderate, and 18 mild. Of the 28 severe cases, 20 came under complete control, six were improved, and two unimproved. One of the last is included in this column because this was one of two cases which was allergic to the medication. Of the 52 in the moderate classification, 39 were completely controlled and 12 were improved; in one case, some allergic reaction occurring, the medication was discontinued, and this case was then classed as unimproved. Of the 18 mild cases, 15 completely cleared up, two were improved, and one case failed to show any appreciable improvement.

Included in the above figure of 98 cases, there were six patients with atopic dermatitis who were greatly improved as their scalps cleared of their seborrheic dermatitis. Also, 10 patients with acne vulgaris were benefited as their scalp condition was brought under control. Eight patients with psoriasis of the scalp were unimproved by this medication. Four cases of so-called "cradle-cap" type of seborrheic dermatitis were completely controlled. Eight patients with otitis externa were treated; of these the condition in four was completely controlled, while four others were not improved.

No increased oiliness of the scalp was noted at any time following the use of this medication. It did not discolor gray or light-colored hair. Prolonged use of the solution produced no apparent decrease in its effectiveness.

The topical use of sodium sulfacetamide for seborrheic dermatitis has been favorably reported on by Duemling, who employed sodium sulfacetamide both in an ointment base and as a soap.

This study by S. T. Whelan (*A.M.A. Arch. Dermatol.* 71:724, 1955) reports on the use of a cream type, greaseless lotion of 10 per cent sodium sulfacetamide (Sebizon Lotion).

Conditions included in this study were seborrheic dermatitis of the scalp and of the glabrous skin, seborrheic overactivity, acne vulgaris, rosacea, and various pyodermas.

Patients were given no medication other than sodium sulfacetamide lotion. Shampoo with Castile soap, at weekly intervals, was advised. The lotion was massaged into affected sites twice daily. The patients were examined and evaluated one week after the shampoo and two weeks after beginning the treatment.

Of 61 cases of seborrheic dermatitis of the scalp, 54, or 88 per cent, showed excellent or good improvement. The results in seborrheic dermatitis of the glabrous skin were encouraging, though less dramatic than on the scalp. Here 30, or 66 per cent, of 44 cases responded satisfactorily.

Acne, vulgaris, rosacea, seborrheic overactivity, and the pyodermas when treated in a similar manner with the lotion gave indefinite results. Of 26 cases of seborrhea, only eight, or 30 per cent, were notably benefited.

The most striking response to sodium sulfacetamide lotion was noted in the treatment of seborrheic dermatitis of the scalp.

Patient acceptance was excellent. Many remarked on the relief of scalp itch shortly after starting treatment. In general clinical response paralleled subjective improvement.

In seven patients, treatment with the lotion had to be discontinued because of burning, itching, stinging, or spread of the process. In no case was true contact dermatitis encountered. Patch tests were performed on three of the seven patients on whom therapy had to be discontinued. These were negative at 48 and 96 hours.

Sebum Fatty Acids

The fatty acid were isolated from sebum, converted to the methyl esters and these fractionally distilled by G. Miescher, H. Lincke and P. Rinderknecht (*Dermatologica* 109:65, 1954). The bactericidal activity of each of the fractions and its hydrogenated form was compared on *Streptococcus hemolyticus*, *Escherichia coli*, and *Staphylococcus aureus*. Most of the fatty acids (35-40 per cent) possessed 16 C atoms, and 50 per cent were unsaturated. Fatty acids with less than 14 C were only six per cent of the mixture, and the ones with 12 C were 80 per cent unsaturated. Those with 14 and 15 C composed 22-27 per cent of the acids and were 25-30 per cent unsaturated. With all three bacteria, fatty acids with 12-13 C killed in two minutes, and hydrogenation had no effect. Fatty acids with 14-16 C killed streptococci and staphylococci in 10-60 minutes; after hydrogenation, killing time was three to six hours. These longer fatty acids killed *E. coli* in 20 minutes to three hours, and hydrogenation had no effect on killing time.

Skin Absorption of B-6

A cold cream type ointment containing 0.05 per cent of pyridoxine hydrochloride (G. G. Villela, *Rev. brasil. biol.* 14:443, 1954; *C.A.* 49:5668) was rubbed into the skin of arms of healthy human subjects. From 22 to 41 per cent of the vitamin was absorbed through the skin and most of it was excreted as 4-pyridoxic acid in the urine in the following 22 hours.

Hair Fat Composition

Hair from chinese boys and girls, when extracted with ether or benzene, gave up to three per cent of hair fat. It consisted of cholesterol, 6-hexadecenoic acid, myristic acid, palmitic acid, stearic acid, oleic acid, ricinoleic acid, and a new acid, jimmoarachidic acid. The ricinoleic acid probably came from hair pomade. — Sheng - Lieh Liu, *J. Chinese Chem. Soc.* 1954, 71, from *Chem. Anstr.* 49:7086.

Hexachlorophene Products

Hexachlorophene in a one per cent to two per cent concentration has been added as an antiseptic to various topical medications by S. Epstein (*A.M.A. Arch. Dermatol.* 71:692, 1955) for the treatment of eczematous dermatoses in several hundred cases.

These preparations appeared effective in combatting bacterial invasion in eczemas. Monilial intertrigo also responded very well.

In vitro tests showed hexachlorophene bacteriostatic against M. pyogenes var. aureus and hemolytic streptococci. The growth of two strains of P. aeruginosa was not inhibited by hexachlorophene. Clinical experience indicated that Pseudomonas infections did not respond to the hexachlorophene preparations.

Hexachlorophene was well tolerated; only one case of true contact sensitivity to hexachlorophene was encountered.

NOW...

SUPERAM

150%A

THE GREATEST ADV

D

CON

I

*With a theoretical activity approaching the maximum of 150% (measured against products previously labeled 100% active), this new group of Onyxol alkanolamides opens entirely new possibilities for users of this type of surfactant.

Unusual new values in wetting, dispersing, foaming, thickening and stabilizing can now be achieved through the perfection of a radically new process for the production of the SUPER-AMIDES with alkanolamide contents of 90% and more.

The great potential of the new SUPER-AMIDE detergents is yet to be even partially realized. Be the first to take advantage of its superior properties for your applications — *write, wire or phone for complete data and samples today.*

***UNSURPASSED FOR* VALUE...**
QUALITY...UNIFORMITY...PERFORMANCE

ONYX OIL & CHEMICAL COMPANY

INDUSTRIAL DIVISION

WARREN & MORRIS STS., JERSEY CITY 2, N. J.
CHICAGO · BOSTON · CHARLOTTE · ATLANTA

For Export: ONYX INTERNATIONAL, Jersey City 2, N. J. • *West Coast Representative:* E. S. BROWNING CO., San Francisco, Los Angeles

PERAMIDES

%ACTIVE*

TEST ADVANCE IN FATTY ACID DIETHANOLAMINE CONDENSATES IN 25 YEARS

SET NEW STANDARDS FOR

FOAMING
WETTING
DISPERSING
STABILIZING
THICKENING

for highest purity **SUPER-AMIDE L9**

for lightest color **SUPER-AMIDE GR**

for maximum economy **SUPER-AMIDE GC**

ANY
2, N. J.
LANTA
os Angeles

have you tried

Amerchols®

LANOLIN CHOLESTEROLS in their most active form.

The Amerchols are safe, non-ionic, natural **EMULSIFIERS, PENETRANTS** and **EMOLLIENTS.** They will help you achieve superior cosmetic and pharmaceutical formulations by markedly improving stability, texture, appearance and effectiveness.

An Amerchol such as the multi-sterol, liquid **Amerchol L-101** enhances softening, penetrating and spreading activity while holding desirable moisture to the skin. The surface active Amerchols function at the interface in oil-in-water emulsions to bring about these unique effects on skin and hair.

The Amerchols are ideal ointment bases since they are stable, induce rapid drug release, and promote optimum healing rates.

WE KNOW OF NO CASE OF AN ALLERGY DUE TO AN AMERCHOL.

AMERICAN CHOLESTEROL PRODUCTS, INC. AMERCHOL

AMERICAN CHOLESTEROL PRODUCTS
• INCORPORATED •
MILLTOWN • • • NEW JERSEY

Write on your business letterhead for technical literature and suggested formulas.

POLIO AND POLITICS

(Continued from page 40)

have greatly increased their coverage of news having to do with diseases and remedies for them, and this is why the press covered so completely, although so incorrectly, the story of the Salk vaccine.

But the time is not now far away when polio control will be quite definitely established and this disease will receive no more attention than dyphtheria, smallpox, or a number of other diseases. However, there will always be a serious disease causing great concern to the average person for which control has not been established. One only has to consider heart and circulatory diseases, as well as cancer, to appreciate what we mean. If an efficacious product were discovered to control at least certain types of either of these classes of diseases, it would immediately become front-page news in practically all the newspapers of the country. And since this is the fact, some sound method of getting the newspaper stories straight so that the industry is not always damned for everything that happens should be developed, and an organization to implement it should be established.

For undue criticism of the industry, which apparently can be avoided and which will probably increase in number and intensity in the future as public interest in health problems continues to grow, eventually leads to demands that these products be produced and/or distributed or at least produced under the direct supervision of the Federal Government. We all read of the demands in Congress to have the Salk vaccine made by the Government, or at least completely distributed by it. There is no valid reason for this. States, counties, and municipalities of the country can take care of the distribution of polio vaccine for the medically indigent as they do in many other diseases.

Unless the pharmaceutical industry takes steps to get the proper coverage in stories concerning diseases and new remedial agents, the Federal Government, the medical profession, and others will hog the limelight. And the more the Federal Government hogs the limelight, the greater will be the demand that pharmaceutical manufacturing become increasingly a Government enterprise.

There are bound to be problems, and perhaps accidents, attending the development and introduction of a new, potent remedial agent. Nothing is 100 per cent perfect, and people are not alike. Neither is a disease in one person the same as in another person. The complete answer to a product cannot possibly be told until a product has had widespread use in the hands of an extremely large number of doctors and in the cases of an extremely large number of patients.

While these facts are well known to the pharmaceutical manufacturers, the public is just about totally unaware of them. The public should be educated to these and other facts that make the pharmaceutical industry one of great risk for the pioneer. The public

(Continued on page 126)

Readers' Questions . . .

Perfume Solution: *Can you give me some assistance in dissolving a perfume oil that I recently obtained so that a usable perfume can be made?* DETROIT.

Perfumes as a rule contain from 10 to 20 per cent of oil dissolved in alcohol so that two ounces of your oil can be dissolved in about eight ounces of alcohol to make a reasonably satisfactory solution. However, it is very seldom that the mere dissolving of an essential oil in alcohol will make a good perfume. As you know, most perfumes are extremely complex mixtures of oil and this complexity, along with careful selection of alcohol quality and aging, is required to develop satisfactory odor characteristics.

Self-Neutralizing Cold Wave: *Can you send me some information concerning ware lotions containing neutralizers? I am interested in products containing both ware solution and neutralizer in the same mixture. I believe they are combinations of thioglycolates and bromates.* LOS ANGELES.

It is our belief that these combined solutions cannot be made by mixing thioglycolate and bromate, since instant neutralization would occur and the solution would be inactive. There is at least one patent covering preparations of this type which I believe relates to the use of manganous salts in the thioglycolate solution to promote oxidation and neutralization by air.

Antioxidant: *Can you give me further information about the products MECSA and METSA mentioned some time ago in "Compounders Corner" and recommended as preservatives for vegetable oils? I am having trouble with rancidity in a hair product containing soy bean oil.* LOS ANGELES.

We do not know whether or not the compounds you mention are yet available commercially. These are abbreviations for the octadecyl ester of carboxymethylmercaptosuccinic acid and the octadecyl ester of thiosuccinic acid which were reported to be oil-soluble chelating compounds and antioxidants at an American Chemical Society meeting. However, butylated hydroxyanisole and propyl gallate have both been accepted by the Department of Agriculture as antioxidants for edible oils and they should serve your purpose. Further information is given in an extended abstract in "Compounders Corner" for May, 1955.

have you tried

Modulan T. M.

The MODIFIED LANOLIN with new properties.

Modulan is chemically treated lanolin containing all the constituents of lanolin modified by a unique treatment to impart NEW and VALUABLE PROPERTIES.

Modulan forms clear solutions even in cold mineral oil and deposits hydrophobic, emollient films on skin and hair. These desirable protective films are waxy rather than tacky and are very pleasant to the touch.

Modulan is extremely hydrophobic – does not form greasy emulsions and is practically odorless. Because of its outstanding compatibility with oil-in-water emulsions and with soaps and shampoos, Modulan is particularly recommended for use in creams, lotions, baby products, hair preparations, make-up, and ointments.

CLINICAL INVESTIGATIONS HAVE INDICATED THAT MODULAN IS HYPO-ALLERGENIC.

AMERICAN CHOLESTEROL PRODUCTS, INC.

AMERCHOL

AMERICAN CHOLESTEROL PRODUCTS
• INCORPORATED •
MILLTOWN • • • NEW JERSEY

Write on your business letterhead for technical literature and suggested formulas.

MORE BUYING APPEAL FOR COSMETIC BOTTLES

(*Continued from page 53*)

print this information on an attractive hang tag and tie the tag to the bottle's neck.

The reason a tag is needed for this purpose is that if you print on your label complete answers to customers' common questions and list a product's sales points, you destroy the label's appearance. The charm of your label makes the charm of your package. It is what impels the customer to pick up your bottle in the first place. So using more copy on your label is not the right way to give the customer wanted further facts about a product whose package has attracted her attention.

Now I am perfectly well aware that someone will object that a tag tied to the neck of a cosmetic bottle will detract from the bottle's appearance. My answer to this is that it can, but that it needn't. Actually, if the tag is artistically designed, it can *add* both esthetic and buying appeal to your package.

Any experienced tag manufacturer can help you design such a tag. Your tag can be die-cut in an attractive shape. It can be made of dainty, colored paper or of sparkling metallic foil. Just as much artistic talent should be expended on your tag as on your label. But this point I cannot overemphasize: the tag's function is to do what your label can't do—that is, present the complete story for your product. To do this, your tag will usually be in the form of a miniature booklet.

I need scarcely mention that it is important the tag be so attached to your product that it won't tear loose under customer handling. This catastrophe can be forestalled by using a patched tag.

Today's consumers are fact-minded. A charming cosmetic package will win a consumer's attention. But to persuade a woman to buy, you must give her facts. This is recognized by those cosmetic manufacturers who place their own sales girls in their best outlets. But as distribution widens, this becomes impracticable. Because today in better than 90 per cent of cosmetic outlets personal selling service is inadequate to supply customers with wanted information during peak selling hours and because there is also the likelihood your product may be merchandised *via* self-selection anyway, an attractive, informative tag tied on the neck of your bottle will certainly step up your sales.

SELECTING A CLOSURE

(*Continued from page 57*)

given product. When this occurs, the cap manufacturer tries to devise a successful combination between the disk laminations and the liner so that together they will form a united, impenetrable barrier. The disk may be impregnable so far as ingredients A and B are concerned, but permit the vapors of C to escape, whereas the liner might permit A to escape but be impervious to B and C.

In other words, the two of them together act in concert to prevent any loss of the product from the moment the package leaves the manufacturer's production line until it is opened by the consumer.

Among the most frequently used liners for liquids are those made of vinylite with a pulp, cork, or other resilient backing. Where a problem of chemical reaction is present, such materials as tin and aluminum foils, Saran, polyethylene and solvent-resistant coated materials are tried with success. Cost is a factor but should not be allowed to dominate the choice.

When a cap manufacturer wants to emphasize moisture retention in the cap, he may use a waxed liner, Saran or polyethylene, which have proved to be the best materials for this purpose. In cosmetics, solid polyethylene liners are used whenever chemically feasible because the polyethylene has a resilience of its own and does not need any backing.

Composition cork is excellent backing material but has one serious handicap—it tends to flake off, forming a thin film of cork dust. This is extremely annoying to drug and cosmetic manufacturers alike who often have to clean each cap before using.

Closure manufacturers seek to reduce this cork dust to the barest minimum by keeping their knives sharp at all times. They also use strong suction devices to clear the cork waste from the area.

If cork backing is used with wax liners, the problem is accentuated further. The cork dust sticks to the wax and is next to impossible to remove.

One of the prime considerations in choosing a closure, of course, is the ease of manufacture. Before confirming the final selection, the cosmetic house should be sure that the cap can be made economically, and with existing production facilities.

There are so many varieties and types of closures available that it is beyond the scope of this article to discuss them fully. However, it is very important for the smaller cosmetic houses to realize that they really do not save money or time by skimping on closure research. A company should put almost as much study into its liners as it does into the exquisite design of the bottle and the color and clarity of the product. This extra precaution will pay for itself many times in the long run.

EMULSIFIED LOTIONS

(*Continued from page 37*)

	Make-Up Base[1]
Ceramol	3.1
Wool wax alcohols	0.3
Sorbitol	5.0
Methyl paraben	0.1
Perfume	0.2
Water	76.3
Insoluble pigment	5.0
Titanium dioxide	10.0

(*Continued on page 117*)

Industry's Books...

Pomp and Pestilence, Infectious Disease, Its Origins and Conquest, *by Ronald Hare, M.D., Professor of Bacteriology in the University of London at St. Thomas's Hospital Medical School, 224 pp., The Philosophical Library Inc., New York, cloth,* **$5.75.**

This is a readable account of the infectious and contagious diseases through the ages.

Drugs in Current Use 1955, *Edited by Walter Model, M.D., Associate Professor, Clinical Pharmacology, Cornell University Medical College, 160 pp., paper, Springer Publishing Co., Inc., New York,* **$2.**

A thousand drugs in current use, listed in A B C order under their proprietary and their official names, with the following: Principal pharmacologic characteristics; major uses, physical properties, absorption; therapeutic and toxic actions; mode of administration; preparations in common use; dosage; available antidotes; warnings relating to dangerous reactions, contraindications, instability of drugs, storage requirements, potency loss or changes, etc.

Nomography and Empirical Equations, *Dale S. Davis, Professor of Chemical Engineering, Virginia Polytechnic Institute, 236 pp., Reinhold Publishing Corp., New York, (1955,) cloth,* **$6.75.**

This book explains the many engineering applications of empirical equations and nomography, and shows how to employ these tools to speed up the engineer's daily on-the-job calculations.

New Practical Formulary, *by Mitchell Freeman, Met. E., Mitchell Laboratories, 376 pp., Chemical Publishing Co., Inc., New York, (1955), cloth,* **$7.95.**

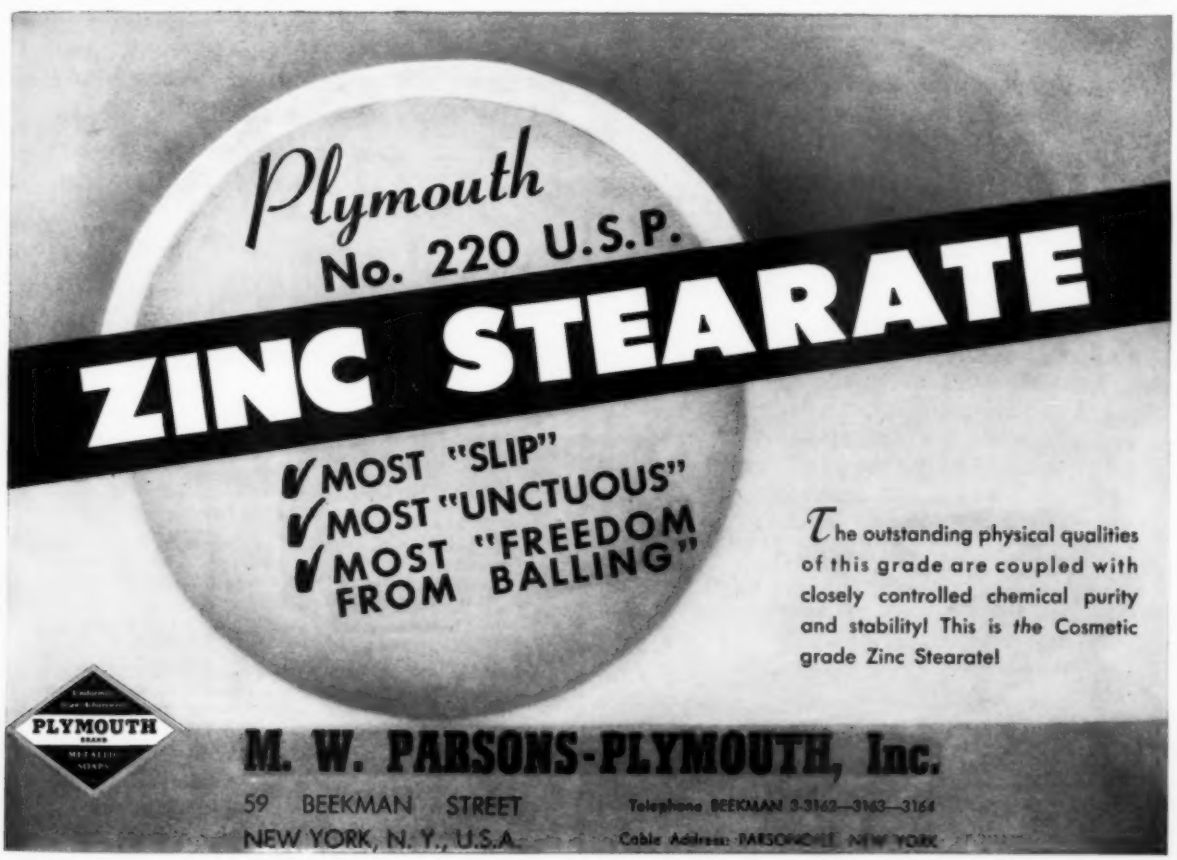
This book contains about 2,500 formulas and processes. Products covered are cements, mucilages, drugs, medicines, foods, beverages, furniture polishes, inks, stain removers, insect destroyers, laundry specialties, paints, varnishes, perfumes, cosmetics, plastic leathers, soaps, detergents, waterproof compounds. Approximately 100 pages are devoted to cosmetics, perfume oils, and perfumes, and 26 pages to pharmaceutical and proprietary preparations.

Principles of Emulsion Technology, *by Paul Becher, Senior Project Chemist, Colgate-Palmolive Co., a Reinhold Pilot Book, 149 pp., Reinhold Publishing Corp., New York, (1955), cloth,* **$2.95.**

This book is written for those who have studied chemistry and are now desirous of learning more about both theoretical and applied emulsions.

Patent Law in the Research Laboratory, *by John Kenneth Wise, a Reinhold Pilot Book, 145 pp., Reinhold Publishing Corp., (1955), cloth,* **$2.95.**

This valuable little book is intended to give the industrial research worker a practical insight into the workings of the patent system and to show him clearly the impact of that system on his day-to-day research activities.


Plymouth
No. 220 U.S.P.
ZINC STEARATE
✓MOST "SLIP"
✓MOST "UNCTUOUS"
✓MOST "FREEDOM FROM BALLING"
The outstanding physical qualities of this grade are coupled with closely controlled chemical purity and stability! This is the Cosmetic grade Zinc Stearate!
PLYMOUTH
M. W. PARSONS-PLYMOUTH, Inc.
59 BEEKMAN STREET
NEW YORK, N. Y., U.S.A.
Telephone BEEKMAN 3-3162—3163—3164
Cable Address: PARSONPLY NEW YORK

Trade Literature

McKesson Wholesale Distribution

National Sales Impact Through McKesson & Robbins is the title of a 24-page booklet dealing with the company's wholesale distribution services to manufacturers of drug store merchandise. Available from McKesson & Robbins, 155 East 44 Street, New York 17, the booklet explains the company's functions, tells how manufacturers can make use of its services, and points up the scope of the company's national operation.

1954 Neilson Report

A. C. Neilson Company, 2101 Howard Street, Chicago 45, has issued The 1954 Neilson Report to Retail Drug and Proprietary Stores. This 52-page booklet is replete with charts and is packed with information of interest all in this industry. The booklet is divided into six general divisions: Drug and Proprietary Store Sales Trends; Sales of Drug Items in Drug and Food Stores; Economic Factors Affecting Drug and Proprietary Stores; Current Dry and Proprietary Store Characteristics; Hints on Better Merchandising; Comments and Suggestions on Various Factors in Drug Store Operation, and General Summary.

Merck Lab. Chemicals Catalogue

The new Merck Laboratory Chemicals Catalogue, now available from Merck & Co., Rahway, N. J., lists more than 1,000 laboratory chemicals including new solvents for spectrophotometric use. Container sizes, chemical formulae, and prices are given on all items, and many are listed with maximum impurities and other specifications.

Primary Amyl Acetates

Primary amyl acetates is fully described in a new technical bulletin issued by Carbide and Carbon Chemicals Company, 30 East 42 Street, New York 17, New York.

Emersol Oleic Acids

Emery Industries, Inc., Dept. 5, Carew Tower, Cincinnati 2, Ohio, has issued a new 20-page, comprehensive booklet on oleic acid titled Emersol Oleic Acids.

Fritzsche Catalogue on Flavors

Fritzsche Brothers, Inc., 76 Ninth Avenue, New York 11, has issued a new 20-page catalog of Flavors for Every Purpose.

Nat. Aniline Booklet

National Aniline Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y., has issued a 6-page bulletin listing a selected group of Synthetic Organic and Pharmaceutical Chemicals produced by the Division.

CSMA Manual

A 52-page compilation of industry-recommended manufacturing and sales practices as a guide to production of top-quality aerosol products is offered by the Chemical Specialties Manufacturers Association, 50 East 41 Street, New York 17, at a charge of 50 cents. This Manual for Vendors and Fillers of Aerosols and Pressurized Packages includes sections on labeling, premarketing product checks, filler safety tips, and postal regulations.

PARTITION MANUFACTURING COMPANY

CARDBOARD PARTITIONS AND SPECIALTIES

165-173 FRANKLIN AVENUE • BROOKLYN 5, N. Y. • ULSTER 5-8100

Gentlemen:

Fragile items require careful packing for safe transportation. 40 years of partition manufacturing experience is assurance that your partition needs, regardless of size or quantity will be GIVEN exacting care.

Suggestions, samples and estimates promptly mailed

Very truly yours,

PARTITION MANUFACTURING CO.

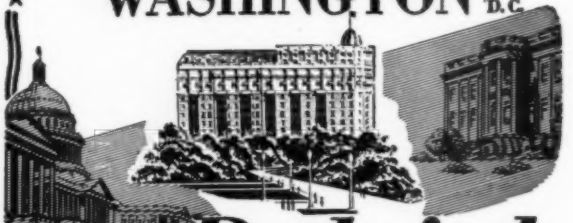
DECORATIVE EDGED

UTILITY PARTITIONS

WANTED: Salesmen to sell above items. Write for particulars.

Midway between the White House and the Capitol in

WASHINGTON D.C.



Raleigh HOTEL *on Famous Pennsylvania Avenue*

Headquarters for tourists and business people. *Raleigh Room* renowned for fine cuisine . . . *Pall Mall Room* for Banquets. Special Courtesies to Honeymooners. 500 Air-Cooled Rooms from $6 single, $9 double.

Joseph Massaglia, Jr., President — John F. Schlotterbeck, Manager

OTHER MASSAGLIA HOTELS

• Hotel MIRAMAR, Santa Monica, Calif. • Hotel BOND, Hartford, Conn.
• Hotel SENATOR, Sacramento, Calif. • Hotel SINTON, Cincinnati, Ohio
• Hotel EL RANCHO, Gallup, New Mex. • Hotel SHERWYN, Pittsburgh, Pa.

World-famed hotels—
Teletype Service — Family Plan

EMULSIFIED LOTIONS

(Continued from page 114)

The lotion can be made by heating together the first four ingredients and the water to 90° C., stirring until homogeneous and stirring until cool. Add the perfume at 50° or lower and mix the previously ground pigments and titanium dioxide with the emulsion at room temperature.

	Hand Lotions[2]	
	No. 322	No. 323
Hystrene T-45 fatty acid	7.0	2.0
Lanolin	0.5	0.5
Arlacel 80	0.5	—
Tween 60	2.5	—
Span 60	—	2.5
G-1734	—	2.5
Sorbo	5.0	5.0
Preservative	q.s.	q.s.
Water	84.5	87.5
Perfume	q.s.	q.s.

Hystrene T-45 fatty acids[2] is a purified fatty acid mixture containing 45 per cent of stearic acid and 55 per cent of palmitic acid.

Arlacel 80[2] is sorbitan monooleate.

Tween 60[2] is polyoxyethylene sorbitan monostearate.

Span 60[2] is sorbitan monostearate.

G-1734[2] is polyoxyethylene sorbitol beeswax derivative.

Sorbo[2] is the commercial 70 per cent aqueous solution of D-sorbitol.

The water-insoluble ingredients are melted together at 90° C., the water, Sorbo and preservative are heated to 95° and added to the melt while stirring. Vigorous stirring is continued until the mixture is cool, the perfume being added at 50° or lower.

	Hand Lotion[3]
Lanolin	6 lbs.
Carbowax Compound 1500	30 lbs.
Stearic acid	18 lbs.
Quince seed mucilage	20 lbs.
Carbitol	30 lbs.
Propylene glycol	20 lbs.
Triethanolamine	1 lb.
Potassium hydroxide	0.5 lb.
Water	480 lbs.
Terpineol	0.1 lb.

Carbowax Compound 1500[3] is polyethylene glycol with an average molecular weight of 1500.

Carbitol[3] is the monoethyl ether of diethylene glycol.

Melt the stearic acid, lanolin and Carbowax and heat to 70° C. In a separate container, heat the solution of the triethanolamine, potassium hydroxide and the water to 70°. Add the hot wax mixture to the heated triethanolamine solution and stir vigorously until a smooth emulsion is formed. Add the Carbitol and the

To Your Cosmetic Powders

Add "KIND-TO-THE-SKIN" Properties

with Horse Head U.S.P. ZINC OXIDE

Your dollars work two ways when you use Zinc Oxide in your face and body powders . . . because Zinc Oxide imparts *both* cosmetic and pharmaceutical properties:

1. COSMETIC PROPERTIES

High Covering Power
Zinc oxide gives more covering power *per dollar* than any other high covering pigment used in cosmetic powders.

Deodorant
Zinc oxide neutralizes perspiration acids.

Sunburn-ray screen
Zinc oxide is opaque to ultraviolet light.

2. PHARMACEUTICAL PROPERTIES

Zinc oxide is widely used in dermatology in the form of zinc oxide ointment and calamine lotion.

It owes its popularity, according to one recognized authority,* to a combination of at least three qualities: it is non-toxic, protective and mildly astringent.

* *The Dispensatory of the United States of America, 1950 Edition*

HORSE HEAD PRODUCTS

THE NEW JERSEY ZINC COMPANY
Founded 1848
Products Distributed by
The New Jersey Zinc Sales Company
New York · Chicago · Boston
Cleveland · San Francisco · Los Angeles

SINE CERA

SINE CERA—Translated literally, means—*without wax*. When used to describe an object of art in the days of early civilization in Rome, it signified perfection. It was a guarantee that there were no flaws or cracks that had to be filled with wax. This term is the basis for the present English word "sincere".

REHEIS—This label, when seen today by the pharmaceutical and cosmetic chemist, also signifies perfection and integrity. Reheis fine chemicals—SINE CERA—are accepted throughout the world as standards of the highest quality. 1344

FINE REHEIS CHEMICALS

REHEIS COMPANY, INC.

Manufacturers of Fine Chemicals

BERKELEY HEIGHTS • NEW JERSEY

quince seed mucilage and stir slowly and continuously. The quince seed mucilage is made by adding 9.5 ounces of quince seed to 20 pounds of water at 80°, soaking overnight, and then straining through a cloth. A suitable preservative should be added to the quince seed mucilage to prevent its molding over a period of time. The mucilage can then be stored for use as needed. When the temperature reaches 50°, add the propylene glycol to which the perfume has been added. Stirring should be continued at slow speed until the lotion has completely cooled, if the desired stability and consistency are to be obtained. Avoid too rapid stirring, which will cause aeration and foaming. Numerous changes can be made in the ratio of the components of this lotion to vary its fluidity and absorbability. In general, its stability is not seriously affected by moderate alterations in the suggested formula.

	Greaseless Lotion[4]
Aldo 33	4.0
Glycerin	3.0
Sodium lauryl sulfate	1.0
Lanolin absorption base	1.0
Stearic acid	1.5
Preservative	0.1
Perfume	0.4
Water	89.0

Aldo 33[4] is a glyceryl monostearate not containing soap, so that it must be used in combination with a primary emulsifier.

Creams of this type can be simply made by heating all the ingredients, with the exception of the volatile perfume, together to 80° C., stirring until a uniform emulsion results and then stirring until cold. The perfume is added at about 50°. This lotion is stable when slightly alkaline, neutral or slightly acid.

	Hand Lotions[5]	
	433/1	433/1A
Tegin	3.5	3.5
Oleic Acid	—	2.0
Glycerin	5.0	5.0
Alcohol	5.0	5.0
Menthol	0.2	0.2
Triethanolamine	—	1.0
Water	86.2	83.2
Tegosept P	0.1	0.1

	Hand Lotions[5]	
	148A	151C
Tegin P	6.0	2.0
Oleic acid	2.0	2.0
Stearic acid	—	6.0
Mineral oil	1.0	—
Cetyl alcohol	1.0	—
Lanolin	1.0	—
Triethanolamine	1.0	1.0
Glycerin	5.0	3.0
Water	82.9	85.9
Tegosept M	0.1	0.1

Tegin[5] is self-emulsifying glyceryl monostearate.

Tegin P[5] is self-emulsifying propylene glycol monostearate.

Tegosept M[5] is methyl paraben.

Tegosept P[5] is propyl paraben.

These emulsions are simply made by heating together all of the components, with the exception of the volatile alcohol and perfume, to 80° C., stirring until cool, and adding the perfume at 40 to 50° and the alcohol at room temperature.

	Hand Lotions[6]	
	No. 1	No. 2
Stearic acid	6.0	2.0
Butyl stearate	1.0	—
Polyethylene Glycol 600 Monostearate	3.0	—
Polyethylene Glycol 400 Monostearate	—	6.0
Mineral oil	—	1.0
Cetyl alcohol	—	0.5
Potassium hydroxide	0.2	—
Triethanolamine	—	1.0
Lanolin	—	0.5
Preservative	0.1	0.1
Water	89.7	88.9

Heat separate mixtures of the oil-soluble and the water-soluble components to 65 to 70°, add one to the other with stirring and continue stirring to room temperature.

	Hand Lotions[7]	
	No. 4	No. 5
Cetyl alcohol	0.43	0.28
Stearic acid	4.30	2.97
Butyl stearate	0.43	0.28
2-Amino-2-methyl-1,3-propanediol	0.14	0.13
Isopropyl palmitate	—	2.35
Veegum	0.72	0.52
Water	92.41	92.37
Glycerin	1.43	0.97
Triethanolamine	0.14	0.13

Veegum[7] is a complex colloidal magnesium aluminum silicate refined from a naturally occurring mineral base.

Veegum is slowly added to the water at room temperature with stirring, the triethanolamine and glycerin added, and the mixture heated to 75° C. Heat the combined oily ingredients to 75° and add to the Veegum suspension and stir until homogeneous.

BIBLIOGRAPHY

1. Aceto Chemical Co., Inc., Flushing, N. Y.
2. Atlas Powder Company, Wilmington 99, Delaware.
3. Carbide and Carbon Chemicals Corporation, New York 17, N. Y.
4. Glyco Products Co., Inc., New York 1, N. Y.
5. Goldschmidt Chemical Corporation, New York 14, N. Y.
6. Kessler Chemical Co., Inc., Philadelphia 35, Pa.
7. R. T. Vanderbilt Company, New York 17, N. Y.

P·L·C

manufacturers

of

LIPSTICKS

FACE POWDER

DRY & CREME

ROUGES

MASCARAS

&

LIQUID & CREME

FOUNDATIONS

LOTIONS

CREMES

Inquiries Invited

P L C

Private Label Cosmetics Co., Inc.

520 West 48th St., New York 36, N.Y.

[(Continued from page 48)

usually about 4.5, to prevent loss in activity of such vitamins as thiamine and pyridoxine.

Another factor to consider is the effect of the solubilizer upon the chemical stability of the other vitamins in solution and the effect on the appearance of the solution. Many of the solubilizers, such as gentisic acid derivatives, form dark complexes to give dark orange or brown solutions. Other solubilizers, such as aminophenols and quinone types, not only give very dark solutions but form precipitates, apparently due to chemical interactions. In general, the most acceptable solubilizers used at present are the hydroxybenzoic acid types, especially N-(2-hydroxyethyl) gentisamide.

Preservatives for Vitamin Solutions Containing Riboflavin

Several chemicals have been used as bacteriostatic agents in vitamin solutions. Some of these materials have physiological activity, especially as local anesthetics. Some of the more commonly used compounds will be discussed.

Chlorobutanol—Many riboflavin-containing vitamin solutions utilize chlorobutanol as the principle bacteriostatic agent. Various complaints registered against this compound include: (a) solubility difficulties, (b) vaporization when heated in attempting solution, (c) great increase in acidity of the solution and (d) formation of precipitates. The source of most of these complaints lies in the heat instability of chlorobutanol. It has been shown[43] that boiling an aqueous solution of chlorobutanol gives a highly acid solution with no bacteriostatic properties. If chlorobutanol is added at intermediate solution temperatures, brought into solution by vigorous agitation, and rapidly cooled, decomposition is virtually eliminated, but this method of solution is slow and requires long agitation. A 0.5 per cent concentration of chlorobutanol is usually employed.

Phenol—In comparing bacteriostatic effectiveness, phenol is perhaps the most powerful of the agents normally employed. When used in vitamin B-complex solutions, phenol should be carefully purified by distillation immediately before use. Unpurified phenol will interact with some of the vitamin components, particularly cyanocobalamin[45]. Common phenol impurities, such as iron, cause thiamine instability and interact with riboflavin-5′-phosphate. Phenol must be used with great caution because of its powerful physiological action, and its classification as an industrial hazard. A maximum of about 0.5 per cent phenol is customarily employed.

Benzyl Alcohol—Because of its multiple effects, benzyl alcohol is a widely used preservative. At a two per cent level, bacteriostatic action is evidenced[20]. At this concentration, some solubilization of riboflavin is effected. The benzyl alcohol also acts as a local anesthetic. Some workers claim that benzyl alcohol causes sediment formation[44]. Contact with rubber stoppers has been reported to cause such reactions.

p-Hydroxybenzoic Acid Esters—The methyl and propyl esters of *p*-hydroxybenzoic acid are finding increasing use as preservatives for vitamin solutions. These esters have been used as preservatives for many pharmaceutical preparations, and exhibit excellent bacteriostatic activity, presenting only the difficulty of solubilization. This is accomplished at elevated solution temperatures.

Gentisic Acid—Salts and amides of gentisic acid, when used as solubilizers for riboflavin, also exhibit bacteriostatic activity. Gentisic acid has also been tested for physiological activity. The ethanolamine derivative, N-(2-hydroxyethyl) gentisamide, has found most favor as a solubilizer.

Table 3. Stability of Riboflavin in Multivitamin Solutions with Small vs. Large Air Space at Varying pH Ranges

Solution Number	1	2	3	4	5	6	7	8
Components (g per liter)								
Riboflavin	3.0	3.0	2.0	2.0	3.0	3.0	2.0	2.0
Niacinamide	25	25	100	100	37.5	37.5	100	100
Thiamine.HCl	10	10	10	10	10	10	10	10
Chlorobutanol	—	—	2.5	2.5	—	—	2.5	2.5
Na 3-HO-2-naphthoate	20	20	—	—	—	—	—	—
Gentisic ethanolamide	—	—	—	—	30	30	—	—
Ca pantothenate	—	—	—	—	—	—	—	2.5
Panthenol	—	—	—	—	—	—	2.5	—
Ascorbic acid	40	—	40	—	40	—	40	40

Percentage Loss of Riboflavin and Appearance of Solution after 100 Days

Air Space	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
pH																
6.0	0	13.6	0	0	20.0	20.0	5.0	6.0	20.3	24.0	5.0	6.0	15.0	35.0	33.0	37.0
	n,x	p,y	n,x,a	n,y	p,y,a	p,x	m,x	m,x	p,y,x	p,x	n,x,a	p,z	m,y	p,x	p,z,a	p,y,
5.0	13.3	40.0	0	0	20.0	26.0	4.0	6.0	9.3	21.0	5.3	6.0	10.0	34.0	31.0	37.0
	p,z	p,z	n,z,b	n,z	p,x	p,x	m,x	m,x	p,y,a	p,x	n,x	p,z	m,x,b	p,x	p,z	p,z
4.0					*9.0	34.0	*0	0	5.3	17.0	*3.3	5.0	10.0	29.0	29.0	30.0
					p,x	p,x	m,x	m,y	n,y	p,x	n,x	p,z	n,x,b	p,y	p,z,b	p,y
3.5					25.0	34.0	0	0	*0	20.6	6.0	7.0	*9.0	31.0	*27.5	30.0
					p,y	p,y	m,y	m,y	n,x	p,x	n,x	p,z	m,x,b	p,y	p	p,z

a—pH loss > -0.3
b—pH gain $> +0.3$
*—optimum pH for riboflavin stability

m—little or no darkening
n—appreciable darkening
p—very dark

x—no precipitate
y—slight precipitate
z—heavy precipitate

Stability Characteristics of Riboflavin in Laboratory Vitamin Solutions

Several solutions were prepared for the study of the following variables: (1) effectiveness of certain solubilizers as preservatives, (2) relative effect upon riboflavin stability of Panthenol versus calcium pantothenate, (3) effect of ascorbic acid upon riboflavin stability, (4) effect of pH upon riboflavin stability, and (5) comparison of the degree of riboflavin decomposition when multivitamin solutions were stored with a high ratio of air space, versus storage with a low ratio of air space. These solutions were prepared with the compositions indicated in Table 3. Aliquots were withdrawn from each solution and stored in bottles with a large air space above the small liquid layer. The bulk of the sample solution was stored in a bottle with a small air space above the large liquid layer. All samples were placed in closed boxes in closed cabinets at about 30° C. At varying intervals, up to 114 days, aliquots of all solutions were assayed fluorimetrically for riboflavin. The appearance of each solution as to color and precipitation was noted, as was the pH of the large samples. From plots of the rate of riboflavin loss, the per cent of riboflavin lost in 100 days was calculated and appears in Table 3.

From the results shown in Table 3, the effects of the various factors being studied were as follows:

(1) Presence of ascorbic acid definitely accelerates[16] the loss of riboflavin activity. Some reports[44] have suggested that ascorbic acid reduces riboflavin to verdoflavin. No such conclusion is indicated in this work. As noted particularly for solutions 3 and 5, from 17 to 34 per cent of the riboflavin was lost without any noticeable precipitate being formed, as would be expected if the riboflavin had been converted to verdoflavin. Further, in the small aliquots (large air space) the entire content of the bottle was carefully rinsed for assay. The assay procedure would have caused any reduced riboflavin to be oxidized and thereby show normal fluorescence. A more drastic reaction has therefore destroyed the riboflavin.

(2) In preservative action, no apparent infestation by microorganisms was detected in any solution. Apparently the chlorobutanol, gentisic acid ethanolamide and sodium 3-hydroxy-2-naphthoate were all effective bacteriostatic agents in these tests. It will be noted that for solutions 3, 4 and 7 no precipitate was formed due to the chlorobutanol[44].

(3) As noted in a previous statement, the sodium 3-hydroxy-2-naphthoate is not practical at a pH below 6.0. Solutions 1 and 2 at pH 5 both deposited precipitates of free 3-hydroxy-2-naphthoic acid after a few hours.

(4) The effect of pH was as expected for vitamin B-complex mixtures[44]. Solutions 3, 4 and 6 showed least riboflavin deterioration at pH 4, solutions 5, 7 and 8 at pH 3.5.

(5) The effect of a high ratio of air is clearly demonstrated. At the pH levels used for each of the eight test

FOR THE DRUG AND COSMETIC INDUSTRY

CHEMICAL INTERMEDIATES
acetaldehyde
acetanilide
acetic anhydride
benzoquinone
isobutyraldehyde

STABILIZERS
Tenox antioxidants for such oils and waxes as paraffin, stearic acid, mineral oil and lanolin

PLASTICIZERS
dimethyl phthalate
diethyl phthalate

SOLVENTS
acetic acid
acetone
ethyl acetate
isobutyl acetate
isobutyl alcohol
isopropyl acetate

PERFUME AROMATICS
hydroquinone dimethyl ether

HEMOSTATIC AGENT and ADSORBENT
oxidized cellulose

For samples of these Eastman chemicals, call or write to our nearest sales office.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York—260 Madison Ave.; Framingham, Mass.—65 Concord St.; Cleveland—Terminal Tower Bldg.; Cincinnati—Carew Tower; Chicago—360 N. Michigan Ave.; St. Louis—Continental Bldg.; Houston—412 Main St. **West Coast: Wilson Meyer Co.,** San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Salt Lake City—73 S. Main St.; Seattle—821 Second Ave.

Eastman CHEMICAL PRODUCTS, INC.,
KINGSPORT, TENNESSEE—a subsidiary of Eastman Kodak Company

solutions, samples with large air space showed from equal to several times the loss of corresponding samples with limited air space.

(6) Panthenol and pantothenic acid salts showed an interesting effect in comparing solutions 3, 7 and 8. With Panthenol present (solution 7), the riboflavin decomposition curves are much like those of solution 3, which contained no pantothenate. Solution 8 containing calcium pantothenate exhibited great riboflavin loss at every pH, and large amounts of precipitation.

Stability of Other Vitamins in Multivitamin Solutions

Various studies have been made to determine mutual compatibilities for the vitamins used in multivitamin solutions. It is generally believed that the greater the total solids content of a solution, the greater the tendency for vitamins to decompose. The rates of decomposition vary with pH, some vitamins possessing very narrow ranges of maximum stability. In general, a pH range of about 3.5 to 5.0 has been adopted for these type products[44].

Thiamine—The optimum pH for thiamine stability has been reported at 3.0, with reasonable stability up to about 4.2[47]. The presence of metallic ions, especially calcium, is reported[44] to accelerate the destruction of thiamine. The use of thiourea[48] has been suggested to prevent interaction of riboflavin and thiamine. Other reports describe a derivative of thiamine with mercaptans[49] and an insoluble complex[50] with 1,5-napthalenedisulfonic acid. Both the hydrochloride and nitrate salts of thiamine are available for formulation.

Niacinamide—The use of niacinamide as a riboflavin solubilizer is most important. The range of pH over which niacinamide is stable is very broad. Excessive amounts of niacinamide, such as are required for obtaining high riboflavin concentrations, frequently will exhibit undesirable physiological effects.

Pantothenic Acid—The formulator has a choice of three compounds as a source of pantothenic acid. The calcium and sodium salts of the acid are available. Calcium pantothenate is undesirable in parenteral multiple vitamin preparations because of its instability at low pH and because of the effect of calcium ions in accelerating decomposition of other vitamins. The preferable compound is Panthenol[44-47]. No additional ions are introduced and Panthenol has optimum stability in the pH 3.0 to 5.0 range.

Pyridoxine—In the pH range of 3.0 to 5.0, pyridoxine has good stability. Normally used as the hydrochloride, no adverse effects of pyridoxine upon other vitamins has been reported.

Cyanocobalamin—Some of the recently marketed multivitamin preparations have contained cyanocobalamin. There are indications that riboflavin accelerates the loss of cyanocobalamin activity. In an earlier section, it was noted that impure phenol causes rapid destruction of cyanocobalamin.

Folic Acid—As in the case of cyanocobalamin, some recent preparations include folic acid. The pH range for stability of folic acid[51] is from 6.0 to 9.8, appreciably above the usual range of vitamin B-complex solutions. Contact[52] with the vitamins of this group, especially riboflavin and thiamine, also hastens decomposition.

Table 4. Typical Multivitamin Injectables Containing Riboflavin

	Riboflavin	Thiamine Hydrochloride	Pyridoxine Hydrochloride	Niacinamide	Ascorbic Acid	Cyanocobalamin	Pantothenates	Vitamin A Palmitate	Vitamin D	Alpha-Tocopherol Acetate	
Units per milliliter solution	mg	mg	mg	mg	mg	mcg	mg	u	u	mg	
Product A	3.0	20	5.0	75(S)	100	20	5.0[a]	—	—	—	(P) Benzyl Alcohol (P) 3,4-Dimethoxybenzyl Alcohol
Product B	2.0	10	1.0	100	—	—	1.0[b]	—	—	—	(P) Methylparaben (P) Propylparaben (S) Gentisic Acid Ethanolamide
Product C	0.3	3	1.0	10(S)	—	—	—	—	—	—	(P) Chlorobutanol, n-saline
Product D	2.0	2	1.0	50(S)	—	—	10.0[c]	—	—	—	(P) Chlorobutanol
Product E	1.0	5	1.5	10	50	—	2.5[b]	1000	100	0.5	(S) Gentisic Acid Ethanolamide Sorethytan Laurate
Product F	3.0	12.5	5.0	50	75	—	2.5[a]	—	—	—	(LA) Benzyl Alcohol (P) Phenol Contains riboflavin-5'-phosphate
Product G	2.0	10	1.0	50	—	—	1.0[c]	—	—	—	(P) Chlorobutanol (S) Urea
Product H	3.0	10	5.0	50	—	20	5.0[b]	—	—	—	(P) Gentisic Acid Ethanolamide

(P) denotes preservative
(LA) denotes local anesthetic
(S) denotes riboflavin solubilizer

[a] denotes Sodium Pantothenate
[b] denotes Panthenol
[c] denotes Calcium Pantothenate

Ascorbic Acid—Earlier sections have repeatedly noted the mutually destructive effect of riboflavin and ascorbic acid[53]. Reports on possible means of stabilizing such vitamin mixtures vary from use of inert atmospheres to use of chemical additives. Reports include using carbon dioxide[54] or nitrogen[55] atmospheres. Additives recommended to decrease the interaction of riboflavin and ascorbic acid include thiourea[56], glutathione[57,58] and albumin[59]. Low pH values tend to increase the reactivity of ascorbic acid.

Riboflavin—As previously noted, riboflavin is available in three crystal types and as sodium riboflavin-5′-phosphate. Riboflavin has good stability in neutral or acidic solutions. The agents for stabilizing ascorbic acid also apply to riboflavin. One report suggests the use of chlorophyll salts[60] to stabilize riboflavin. Sodium riboflavin-5′-phosphate decreases in solubility[61] with decreasing pH. Heating in acid solution tends to hydrolyze the phosphate group. Use of chelating compounds has been suggested to prevent decomposition of riboflavin-5′-phosphate in the presence of metal ions. It should also be noted that the riboflavin-5′-phosphate salts are very insoluble in such materials as benzyl alcohol[62].

Parenteral Manufacturing Procedures

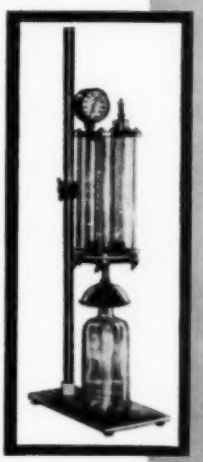
Manufacturing procedures followed in the preparation of parenteral multiple vitamin solutions generally are limited by several factors. Solution of the individual components, protection from loss in activity, maintenance of non-pyrogenicity, and sterilization of heat labile constituents are elements which limit and design the procedure for preparation of riboflavin containing parenterals. Of the many vitamins found in such medicinals, riboflavin represents the substance which is most difficult to dissolve. Fortunately, riboflavin is not as sensitive to heat as other vitamins, this property lending itself to the preparation of multiple vitamin solutions. A logical general procedure may be devised from this information. Substances in the formula which dissolve more rapidly at elevated solution temperatures and are not adversely affected by heat are dissolved in this manner. These solutions are cooled and the heat labile constituents are dissolved by agitation.

Table 4 lists typical multivitamin injectable products which contain riboflavin. A typical procedure for the preparation of a multiple-vitamin parenteral solution would be to follow compounding instructions as briefly outlined.

1. After washing and rinsing the compounding vessel and agitator with pyrogen-free Water for Injection, a major portion of the Water for Injection is metered into the vessel.

2. The agitator is started and the solution is heated to about 90-95° C. The preservative, as for example methyl and propylparabens, may be added and dissolved with agitation. When dissolved, the temperature may be lowered temporarily.

3. At this point, solubilizers, sequestering and chelating agents, buffers, and salts influencing isotonic-



Especially designed for the handling of small volumes of liquid. Stainless Steel and Pyrex construction.

2800 cc

LABORATORY FILTER

Cloth, paper, asbestos pads or any other filter media may be used. Has special outlet assembly for sterile bottling for bacteriological work.

Also available in smaller sizes.

Write for catalog, a helpful answer to filtration problems.

HORM PRESSURE & VACUUM LABORATORY FILTERS

F. R. HORMANN & CO., INC., 17 Stone Street, Newark 4, N. J.

HUISKING

CHEMICALS

PHARMACEUTICAL INDUSTRIAL

OILS • VITAMINS • DRUGS • RAW MATERIALS

Importers Exporters Manufacturers

CAMPHOR USP POWDER DuPont
CAMPHOR USP TABLETS 1/2 & 1 OZ. Tower Brand
QUININE & SALTS Braunschweig
QUINIDINE & SALTS Braunschweig
HYOSCINE HYDROBROMIDE
HYOSCYAMINE Hydrobr. & Sulfate
SUGAR OF MILK USP & Commercial
CHLOROPHYLL Allen's
MENTHOL USP
ATROPINE SULFATE & ALKALOID
THYMOL NF Crystals
EPHEDRINE HYDROCHLORIDE USP
BRUCINE SALTS
ICHTHAMMOL
SULFUR USP PRECIP. English
MAGNESIUM CARBONATE USP Blocks
NAPHTHALENE
HAARLEM OIL

COD LIVER OIL USP
Peder Devold
ALL POTENCIES
•
For Poultry & Animal Feeding:
COD LIVER OIL Devolked®
USP & Fortified Grades
VITAMIN A & D FEEDING OILS
Devold
•
WHEAT GERM OIL
Peder Devold

SANTONIN and ALKALOIDS of American Manufacture

CHAS. L. HUISKING & CO., INC.
PEDER DEVOLD OIL CO. DIV. SANTONINE CO. OF AMERICA DIV.
215 FOURTH AVENUE, NEW YORK 3, N. Y.
Factory & Warehouse: 45 CLINTON AVENUE, BROOKLYN 5, N. Y.
Telephone: GRamercy 5-3900
Telegrams: HUISKING, WUX, NEW YORK
Cables: HUISKING, NEW YORK
London Agents: Wheeler & Huisking Ltd. 26 Great Tower St., E.C.3
Since 1910

ity may be added. If for example, gentisic acid ethanolamide is added as a solubilizer, it is desirable to dissolve it as quickly as possible with short exposure to heat to avoid undue darkening in product color which is apt to occur with this agent. If niacinamide is used as the solubilizer for riboflavin, it is added with agitation and has no tendency to add to product color.

4. Riboflavin is added to the hot solution with agitation at its maximum. Formulations containing high concentrations of riboflavin require that the temperature be raised to a point between 90 and 95° C. at which there is solubilization and a sudden clearing of the solution to a deep clear yellow from the yellow orange color of the suspended riboflavin. At this point, the heat is immediately removed and the cooling process initiated. Careful manipulation and prompt cooling results in products with less riboflavin loss due to manufacturing and less tendency to heavy coloration.

5. During the cooling, any heat stable additives or therapeutic constituents may be dissolved. Agitation is essential while cooling in solution.

6. When the solution has cooled to 30° C., the addition with agitation of the heat labile ingredients is advisable. Among these may be thiamine salts, pyridoxine hydrochloride, Panthenol or sodium or calcium pantothenate and ascorbic acid.

7. The addition of the oil-soluble vitamins A, D, and E may be accomplished by their intimate dispersion in an emulsifying agent such as Polysorbate 80 and the addition of this oleaginous dispersion, en masse, into the aqueous solution with vigorous agitation. The result is a transparent oil in water dispersion[63].

8. The batch is adjusted to proper volume with Water for Injection, and to the required pH.

9. The solution is sterilized by filtration through sterile Seitz filters or Selas porcelain candles into previously washed, pyrogen-free water rinsed, sterilized, glass filling bottles.

10. The product is sampled aseptically and held for filling until released by the control laboratory as approved for the required specifications.

An expansion of information presented in the typical compounding procedure may be desirable. Several fundamental manufacturing techniques should be followed in the preparation of quality riboflavin parenterals. The use of glass-lined, steam jacketed compounding tanks is desirable. Small quantities may be prepared in pyrex, heavy glass bottles. Certain vitamins and their salts, as for example riboflavin-5-′ phosphate, are destroyed or partially inactivated by the trace presence of metals. For this reason glass is most desirable. Properly engineered heating and cooling facilities are essential to adequate control of these unit processes during manufacture. The advantages of adequate and quick cooling have been previously mentioned.

The usual precautions as to cleanliness are advised as well as the use of pyrogen-free Water for Injection to rinse equipment and vessels involved in the manufacture of the product. These measures should be coupled with the prudent use of raw materials which are of quality suitable for the preparation of parenteral products. Many vitamins are sold under a special qualifying title as suitable for injectable or parenteral products.

Since riboflavin is a light sensitive chemical, it should be protected from light sources, especially ultraviolet radiation, throughout the manufacture of the product. De Ritter, *et al.*,[2] notes the more rapid destruction of the riboflavin-5′-phosphate than riboflavin by light.

Because many of the ingredients of multiple vitamin solutions are subject to oxidative destruction, it is desirable to limit the exposure of solutions to air. The pre-heating of Water for Injection to boiling serves to remove any entrapped oxygen from solution. Reabsorption of oxygen from the atmosphere may be eliminated hy preparation of the solution under a blanket of purified nitrogen. This may be accomplished by passage of purified nitrogen from cylinders through Selas candles which allow bubbles of the inert gas to escape below the surface of the solution. The bubbles rise through the solution and form an oxygen-free barrier above the solution.

Lyophilized Multiple Vitamin Parenterals Containing Riboflavin

Because of possible chemical incompatibilities leading to inactivation of one or more of the therapeutic components of multivitamin products, several techniques to reduce this possible interaction have been utilized for marketed products. Since many of the vitamin degradation reactions occur rapidly in solution but to a very limited extent in dry form, a mixture of dry vitamin powder would appear to be ideal. However, solubility characteristics of such dry mixtures may not be suitable for ready use of the product. In addition, the easiest method of sterilization for this type of product is filtration. Therefore, since freeze-dried products combine the properties of dry form, solubility, and filter sterilization, this unit operation has been adopted for many multiple-vitamin injectables including those containing riboflavin.

Freeze-drying offers the advantage of increased product shelf-life at room temperature, product stabilization, facility of sterilization, and ready solubility. The compatibility protection offered by this method of production is dependent upon a short processing interval between solution of ingredients and freezing. A discussion of processing and developmental techniques concerning lyophilized pharmaceuticals of this type has been presented in another publication[64].

Lyophilized multivitamin mixtures containing riboflavin are usually marketed in sterile vials with rubber closure to facilitate the use of the preparation as a multiple dose container. The product may be packaged with accompanying sterile diluent to be used for reconstitution of the lyophilized cake when administration is desired. An additional modification in pack-

aging allows the removal of incompatible components from the lyophilized cake by placing them in the accompanying diluent which is furnished. Such separation of ingredients has been utilized by many manufacturers to overcome stability difficulties due to the interaction of ascorbic acid and riboflavin or ascorbic acid and cyanocobalamin. The use of another packaging device called the Univial has accomplished this segregation of ingredients and provides diluent for reconstitution through the use of a two-chambered vial.

Several physical characteristics of lyophilized multivitamin products should be considered. The appearance of the dried cake is a prime factor for consideration. It is desirable to market a product which is uniform in appearance, of acceptable color, and of firm crystalline structure to maintain its cake-form. Uniformity of appearance may be accomplished by adequate control and proper freezing and drying techniques. An aid to product uniformity is the use of components without tendency to discolor and the inclusion of ingredients which aid in the formation of the necessary crystalline structure. Niacinamide is prone to form sturdy lyophilized cakes with uniform crystalline grains. This property coupled with the solubilizing effect of niacinamide make it a desirable ingredient of lyophilized riboflavin parenterals.

REFERENCES

1. Dale, J. K., U. S. Pat. No. 2,693,633 (1952).
2. DeRitter, E., Scheiner, J., Jahns, F. W., Drekter, L., and Rubin, S. H., J. Am. Pharm. Assoc. **44**, 1 (1955).
3. Schoen, K., and Gordon, S. N., (a) Arch. Biochem. **22**, 149 (1949). (b) U. S. Pat. No. 2,587,533 (1952).
4. Schoen, K., and Gordon, S. M., Science **112**, 125 (1950).
5. Furter, M. F., Haas, G. J., and Rubin, S. H., J. Biol. Chem. **160**, 293 (1945).
6. Flexser, L. A., and Farkas, W. G., U. S. Pat. No. 2,664,421 (1953).
7. Anon., Chem. Eng. **61**, No. 11, 121 (1954).
8. Serchi, G., and Albertazzi, G., Chimica **8**, 54 (1953).
9. Zentner, M. R., U. S. Pat. No. 2,423,074 (1947).
10. Suter, C. M., U. S. Pat. No. 2,601,569 (1952).
11. Stecher, P., U. S. Pat. No. 2,480,517 (1949).
12. Anon., Chem. Eng. News **30**, 1414 (1952).
13. Jurist, A. E., U. S. Pat. No. 2,358,331 (1944).
14. Schlapfer, R., (Hoffmann-La Roche) (a) U. S. Pat. No. 2,458,430 (1949) (b) Swiss Pat. No. 248,636 (1948).
15. Auhagen, E., (a) U. S. Pat. No. 2,256,604 (1941). (b) Ger. Pat. No. 698,815 (1940).
16. Frost, D. V., U. S. Pat. No. 2,407,412 (1946).
17. Charney, J., U. S. Pat. No. 2,445,208 (1948).
18. Harte, R. A., and Chen, J. L., J. Am. Pharm. Assoc. **38**, 568 (1949).
19. Gerlough, T. D., and Smith, E. L., U. S. Pat. No. 2,459,518 (1949).
20. Gershenfeld, L., Am. J. Pharm. **124**, 399 (1952).
21. Knauf, A. E., and Kirchmeyer, F. J., U. S. Pat. No. 2,440,050 (1948).
22. Miller, H. C., U. S. Pat. No. 2,395,378 (1946).
23. Dottori, N. A., Rev. farm. (Argent.) **93**, 184 (1951).
24. Terp, P., and Trolle-Lassen, C., Arch. Pharm. Chemi **59**, 801 (1952).
25. Leal, A. M., Andrade, A., and Alves, M. de L., Rev. port. farm. **2**, 126 (1952).
26. Kamata, M., Jap. Pat. No. 7097 (1951).
27. Preiswerk, E., U. S. Pat. No. 2,349,986 (1944).
28. Hoffmann-La Roche, Swiss Pat. No. 239,643 (1946).
29. Charney, J., U. S. Pat. No. 2,449,640 (1948).
30. Furter, M. F., and Hoffer, M., U. S. Pat. No. 2,438,880 (1948).
31. Hoffmann-La Roche, Brit. Pat. No. 624,680 (1949).
32. Hoffer, M., (a) U. S. Pat. No. 2,463,461 (1949). (b) Brit. Pat. No. 651,113 (1951).
33. Bird, J. C., and Kuna, A., U. S. Pat. No. 2,407,624 (1946).
34. Zentner, M. R., and Haas, G. J., U. S. Pat. No. 2,571,325 (1951).
35. Zentner, M. R., U. S. Pat. No. 2,571,326 (1951).
36. Okamoto, T., Jap. Pat. No. 97 (1953).
37. Arnold, A., Auerbach, M. E., Shepherd, J. R., and Sobell, S. D., Poultry Sci. **31**, 350 (1952).
38. Auerbach, M. E., U. S. Pat. No. 2,332,548 (1943).
39. Frost, D. V., U. S. Pat. No. 2,388,261 (1945).
40. Fine, R. DeM. III, U. S. Pat. No. 2,650,894 (1953).
41. Shimizu, S. J. Fermentation Technol. (Jap.) **28**, 135 (1950).
42. Shimizu, S. J., Fermentation Technol. (Jap.) **28**, 397 (1950).
43. Gershenfeld, L., Am. J. Pharm. **124**, 363 (1952).
44. Siemers, G. F., Drug and Cosmetic Ind. **69**, 318 (1951).
45. Gakenheimer, W. C., Bull. Parenteral Drug Assoc., **6**, No. 5, 2 (1952).
46. Tria, E., Barnabei, O., and Gieri, C., Ann. univ. Ferrara **7**, Pt. I, 123 (1949).
47. Merck and Co., Brit. Pat. No. 652,284 (1951).
48. Inagaki, C., and Takeda, K., J. Agr. Chem. Soc.-Japan **24**, 486 (1950-51).
49. Matsukawa, T., and Yurugi, S., Jap. Pat. No. 1840 (1954).
50. Farbenfabriken Bayer, Ger. Pat. No. 831,247 (1952).
51. Biamonte, A. R., and Schneller, G. H., J. Am. Pharm. Assoc. **40**, 313 (1951).

(Continued on page 126)

PRINTING THAT DEFIES WEAR
for polyethylene bottles
For printing that will not come off, leading packagers choose Poly Perm.
• clean, legible, flexible
• will not crack, peel or smear
• alcohol resistant, oil-proof
• unaffected by hot or cold, clear or saponified water
Write today for details and prices:
POLY PERM PRINTING, INC.
64-74 West 23rd Street • New York 10, N. Y.

IF YOU NEED PRINTING on POLYETHYLENE BOTTLES

It will pay you to investigate this advertisement.

Screen printing has always been acknowledged the best method for marking on plastic containers. In most instances it is cheaper than hot stamping, and there is no comparison for legibility, durability and adhesion to your container. For appearance, it has never been equalled by any other method.

We will stand back of any job, large or small, without loss to the customer.

Leading drug and cosmetic houses choose Poly Perm.

Send us your container for a quotation.

POLY PERM PRINTING, INC.
64-74 West 23rd St., New York 10, N. Y.

Telephone: CHelsea 3-0021

(*Continued from page 125*)

52. Scheindlin, S., Lee, A., and Griffith, L. J. Am. Pharm. Assoc. **41**, 420 (1952).
53. Lesser, M. A., Drug and Cosmetic Ind. **74**, 646, 729, 789, 870, 874 (1954).
54. Dalesio, G. N., Rev. farm. (Agent.) **93**, 124 (1951).
55. Terao, K., et al., Jap. Pat. No. 4946 (1951).
56. Gockel, H., Deut. Lebensm.-Rundschau, 9 (1942).
57. Numata, I., Science (Jap.) **12**, 218 (1942).
58. Hopkins, F. G., Compt. rend. trav. lab. Carlsberg, Ser. chim. **22**, 226 (1938).
59. Chemodur, Fr. Pat. No. 965,883 (1950).
60. Inagaki, C., Iechika, K., and Sakurai, J., J. Agr. Chem. Soc. Japan **26**, 445 (1952).
61. Sleezer, P. E., Weiss, M. S., and Siemers, G. F., Drug and Cosmetic Ind. **74**, 196, 283 (1954).
62. Sekido, S., et. al., Jap. Pat. No. 5390 (1952).
63. Freedman, L., and Green, E., U. S. Pat. No. 2,417,299 (1947).
64. Gross, H. M., Drug and Cosmetic Ind. **75**, 468 (1954).
65. Tamayo, M. L., Leon, J. L., and Estada, C., J. Org. Chem. **17**, 812 (1952).
66. Trumper, M., Med. Clin. N. Amer. **38**, 299 (1954).
67. Observations of workers in these Labrotories.

PATENT THOUGHTS AND TRENDS

(*Continued from page 71*)

no less than 53 specific examples of aryl alkyl urea compounds are given to illustrate the compounds coming within the scope of the formula above mentioned.

Then, four different specific compounds, as well as their salts, esters, and amides are given of hormonal type herbicidal compounds that can be admixed with the aryl alkyl ureas. Then follows the disclosure that 14 different contact type of herbicides and various derivatives thereof can be used.

Full directions then are given concerning proportions of ingredients, methods of preparing the mixtures, methods of preparing different compositions containing the mixtures and finally not less than 34 different specific examples of combinations in which the substituted ureas and other herbicides are mutually activating to produce a synergistic herbicidal effect are given.

Perhaps anyone who is interested in obtaining a patent on a chemical composition as a model can do a lot worse than invest 25 cents for a copy of this patent, which can be obtained from the U. S. Patent Office, Washington, D. C.

POLIO AND POLITICS

(*Continued from page 112*)

will quickly understand how important the pioneers in medical development are if they are told the true facts surrounding some of the great medical discoveries originating in the pharmaceutical industry.

But it is clearly up to the industry itself to see that the public is educated in this direction. The public is avid for information concerning diseases and therapeutic agents. Why doesn't this industry seize this opportunity and feed these people the facts regarding the pharmaceutical manufacturers' important and indispensable place in the development of so-called wonder drugs of today?

Further than this, the industry can set up a clearing house through which all requests for information concerning drugs and diseases would pass. Then if a reporter for a newspaper were writing a story on drugs and diseases, he could check his information at this one point.

It is time for the pharmaceutical industry to appre-

GUMS
ARABIC
GHATTI
GUAR
KARAYA
(INDIAN)
LOCUST
(CAROB FLOUR)
TRAGACANTH

REPRESENTATIVES:
CHICAGO: CLARENCE MORGAN, INC.
BOSTON: P. A. HOUGHTON, INC.
PHILADELPHIA: HARRY W. GAFFNEY
LOS ANGELES: C. H. OWINGS
ST. LOUIS: C. L. IORNS CO.

CASEIN
MENTHOL
(NATURAL CRYSTALS)
EGG ALBUMEN
BLOOD ALBUMEN
QUINCE SEED
JAPAN WAX

PAUL A.
DUNKEL
AND COMPANY, INC.
IMPORTERS AND EXPORTERS
26 JOURNAL SQ.,
JERSEY CITY 6, N. J.
TEL: JOurnal Sq. 3-6400
NEW YORK TEL: WOrth 4-3341
CHICAGO:
325 NO. WELLS ST.
TEL: SU. 7-2462

ciate the fact that it has grown up and that it must surround itself with all the safeguards necessary for its continued welfare. The industry is too much a part of the life of the average individual today to neglect the task of having its story told always at least correctly. If the industry does neglect to take the necessary steps to bring this about, it will regret it much sooner than is generally anticipated. Action should be taken at once!

ACID COSMETICS

(Continued from page 41)

in general react with anionic active substances such as soaps to produce a complex substance highly insoluble in water. If a quaternary film is on the hands it would be expected that this complex would be produced on immersion in water and thus protect the hands to a general degree if not entirely as compared to the better known older types. In addition there is the possibility of imparting a better "feel." Since most of the experience of the cosmetic formulator, in so far as emulsions are concerned, is with anionic emulsifiers he should remember that there are a large number of substances which he would ordinarily use which should be barred if quaternaries are to be used. None of the natural gums for example would be compatible, indeed he is limited to the use of non-ionic gum as exemplified by methylcellulose. Soaps, of course, are incompatible as are any of the anionic emulsifiers. Free fatty acids as such also react with quaternary ammonium salts to produce a complex with the release of free mineral acid as is evidenced by the great drop in pH after such a mixture is made. If these facts are borne in mind the formulator will find that the quaternaries will have much the same properties as do the soaps. The eighteen carbon quaternaries produce the most stable emulsions in conjunction with glyceryl monostearate and cetyl and stearyl alcohols, for example. In hand lotions he may be more severely limited because he does not have the choice in gums otherwise available. Though methylcellulose is an excellent thickener it does not have the emulsion stabilizing effect that quince seed mucilage has. The pH of the final system, furthermore, has a greater effect on viscosity than is true in the better known lotions. However by proper study of these factors it is possible to produce lotions of great stability as well as good characteristics.

Quaternaries have been the subject of intense controversy because many of them are irritating, and in general as a group are perhaps more irritating than are their anionic counterparts. However there are a large number of different quaternaries—and they vary as to the length of the hydrophobic chain as well as in their chemical constitution. Their irritational effects vary to the same extent. It is possible to make quaternary ammonium salt emulsions which have no greater irritational effects than anionic emulsions, as has been proven by the public acceptance of a large number of them. It is wise however to have these products checked experimentally not only against the rabbit's eye but by human use tests to be sure of the product.

HAVE YOU TRIED

hydrophilic

ALGIN

colloids

Kelco algin products are especially effective for Thickening, Suspending, Stabilizing, Emulsifying, Gel Producing, and Film Forming:

KELGIN[1]

toothpaste, surgical gels, paper coatings

KELACID[1]

tablet disintegrant

KELMAR[1]

dental impression compounds

KELCOLOID[1]

emulsion stabilization

KELCOSOL[1]

tablet binder

Extracted from giant marine kelp, Kelco algin products are constantly being adapted to new uses in varied cosmetic and pharmaceutical applications. Their outstanding acceptance is based on their unique and effective hydrophilic colloidal properties . . . plus their economy, uniformity, versatility and ready availability from domestic sources. For additional information, mail coupon below.

products of the **KELCO** *company*

31 NASSAU ST., N. Y. 5, N. Y. • 20 N. WACKER DR., CHICAGO 6, ILL.
530 WEST SIXTH STREET, LOS ANGELES 14, CALIF.
CABLE ADDRESS: KELCOALGIN — NEW YORK

[1]Trade Mark Registered U. S. Pat. Off.

ALGIN AT WORK

Available from domestic sources and precisely engineered for specific uses, Kelco algin products are manufactured to absolutely uniform standards by the Kelco control procedure, which includes 46 distinct tests.

KELCO COMPANY
Dept. G , 31 Nassau St., New York 5, N. Y.
Please send free copy of your valuable, informative "Algin at Work" brochure and any additional detailed information available regarding the use of algin in.....
.....
Name.....
Position.....
Company.....
Address.....
City..... State.....

Italian

TALC

•

CHARLES MATHIEU, Inc.
77 RIVER STREET • HOBOKEN, N. J.
Telephone: HOboken 3-4412
New York: BArclay 7-3618

KALIX-DUPUY
AUTOMATIC TUBE FILLING,
CLOSING & CRIMPING MACHINE

SIMPLICITY • LOWER PRICE
IMMEDIATE DELIVERY

★ 120 Gross Daily—One Operator.
★ 15 Minutes to Change Size. Very low Change cost.
★ Quickly Cleaned — No Hose — Fills Tubes, Jars or Cans.
★ Accurate Fill—No drip—No smearing—No air.
★ Handles all metal tubes. Model RV-7 from ⅜" to 1½" diam. x 7½" high. RV-10 from 1" to 2½" diam. x 12" high.
★ Two-fold—Three-fold or Quadruple fold on RV-7. Two-fold or Three-fold on RV-10.
★ No tube—no fill. Coding Jaws—Automatic Ejector.
★ Cap Tightener.
★ Stainless Steel Contact Parts.
★ Fully guaranteed — Replacement parts and service readily available.

COMPLETE SERVICE and PARTS FROM NEW YORK STOCK

•

WRITE FOR DESCRIPTIVE FOLDER AND PRICES

HARING EQUIPMENT Corp.
EXCLUSIVE KALIX-DUPUY DISTRIBUTOR
533 WEST BROADWAY, N. Y. 12 • GR 7-2217

As was brought out during testimony given at a congressional hearing an irritational difficulty developed because of the mixture of two supposedly safe substances by themselves, but the mixture proved to be too irritating for general use. This type of synergism is not at all uncommon and the possibility should be checked.

The most challenging effect of the quaternary is possibly its substantive activity. This property in conjunction with a known water repellent may perhaps produce a better protection film than is otherwise possible. This is not as far fetched as it seems since there is evidence to show that the quaternaries in being adsorbed drag significant amounts of other hydrophobic materials along with them.

A.P.M.A. MEETING

(Continued from page 39)

cials are "optmistically shooting for an average 30-day action period" in the processing of new drug applications. "To this end," he said, "we propose, in conjunction with the Commissioner's office, to undertake a re-evaluation of our new-drug operating procedures during the coming summer months."

However, Dr. Holland said that because personal conferences with representatives of industry which in 1954 numbered 2,492 in addition to over 4,500 phone calls, most of the members of "the professional and technical staff spend too many hours of overtime and weekends in order to just barely keep up." Added Dr. Holland:

"Sixty days for mandatory review does not seem unreasonable when one considers that you have spent months and even years accumulating the data and preparing for it. . . . Frankly, I'm surprised that we meet the 60-day statutory deadline as frequently as we do without having to extend the time to 180 days."

Dr. Holland said that if a manufacturer does not hear from the FDA on a new drug application within 60 days, it is safe to go ahead providing the company does not materially change any of the conditions stated in the new-drug application.

"Disclosure of the source of an ingredient for a new drug is required only for those substances that are not adequately characterized as to identity, strength, quality, and purity in absence of information furnished by the supplier of that ingredient," said Dr. Holland. "When a new-drug application includes commitments from a supplier as to conditions of manufacture, specifications, or laboratory control for an ingredient—only then is a supplement to the new-drug application required when a change is made in the source of supply. No information is required on drug ingredients or raw materials that have been in common use and which are adequately characterized by laboratory methods such as those described in the U. S. P., the N.F., or other standard methods and which are used by the applicant."

In predicting "What the Drug Store Will Be Like in 1980," Dan Rennick, editor of the American Druggist, said that by 1980 population will total 238 million,

an increase of 47 per cent which will require more drug stores. In 1980 there will be 24 million people 65-and-over, compared with 13.7 million today, requiring establishment in drug stores of Geriatric departments featuring drugs, foods, and supplies for the aged. Real purchasing power per capita increased 45 per cent from 1939 to 1954, and increase at least another 25 to 35 per cent by 1980. In 1939 the average physician wrote 892 prescriptions, in 1954 this increased 141 per cent to 2,147 prescriptions, and by 1980 the number will reach a minimum of 3,800. In 1939 the average family spent $1.51 for prescriptions, and in 1954 this figure rose 396 per cent to $22.37. In 1980 this figure will rise to $35.00 at today's prices. In 1939 the prescription department accounted for 10.8 per cent of total drug store sales, against 25.2 per cent today. In 1980 this figure will be 35 to 40 per cent.

By 1980, Mr. Rennick predicted that the flight to the suburbs will have slowed down almost to a halt, leaving one-third of the drug stores in the cities, compared with 45 per cent today; one-third in the suburbs and small cities, compared with 20 per cent today; and one-third located in the rural areas and small towns (below 10,000 population, compared with 35 per cent today.

The number of drug stores has decreased by 2,000 since 1939 with only 48,000 in existence today despite a population increase of 20 million during that period, said Mr. Rennick. In 1980, he predicted, there will be at least 50,000 drug stores, perhaps as many as 55,000, of which 6,000 will be devoted largely or exclusively to professional work. Most of the 6,000 will be in close physical proximity to hospitals and medical arts buildings. By 1980, 10,000, or 20 per cent of all drug stores will be located in shopping centers. About 1,000 will be located in, or immediately adjacent to, medical clinics.

The drug store of 1980 will be at least twice as large, and perhaps three times as large, as it is today, with many new departments drawn from department stores and specialty shops, such as, electric appliances, tape and wire recordings, bathroom accessories, prepackaged hosiery, prepackaged infants wear, party products, gift and art products, and hobby goods.

Virtually the entire front third of the average drug store of 1980 will be devoted to health products, predicted Mr. Rennick. These will be segregated into departments bearing such titles as: Prescriptions, Medical Specialties, Vitamins, Packaged Medicines, Rx Accessories, First Aid Goods, Sickroom Needs, Invalid Aids, Hearing Aids, For Older People, For Diabetics, Baby Health, Dietetic Needs, Allergy Products, Feminine Hygiene.

The number of drug stores using self-service on 50 per cent or more of their available selling areas has doubled within the last two years, and close to 20 per cent of all drug stores are now operating with extensive self-service, said Mr. Rennick. In 1980, probably all drug stores, except the 6,000 professional stores, will be on 50 per cent or more self-service.

Old Empire

PLASTIC TUBES

We are filling on fully automatic equipment the new, revolutionary polyethylene (Bradley) or vinyl (Wallace) collapsible tubes.

Manufacturing and control laboratories under strict technical supervision.

Inquiries solicited • *Samples on request*

NATIONAL ASSOCIATION OF PRIVATE BRAND MANUFACTURERS NAPBM QUALITY DEPENDABILITY INTEGRITY

OLD EMPIRE, INC.
Mt. Prospect & Verona Aves.
Newark 4, New Jersey
HUmboldt 4-2121

"PADDIE PUFFS"

are specially manufactured —

To insure excellent make-up application

Adopted by leading Cosmetic Houses because they are designed for pressed powder make-up.

Machine made in uniform size and various thicknesses.

Note the rounded edge to avoid streaks in the make-up, and the attractive satin top for your gold imprint.

You owe your fine cosmetics the best puffs ever designed to insure excellent make-up application.

Write for samples and prices.

VALCOURT PADDIES Patent No. 2-337-695

VALCOURT, INC.
100 West 22nd Street, New York 11, N. Y.

Pointing out that the 60-hour week of 1900 dropped to a 45-hour week in 1920, then to a 40-hour week in 1950, and that at the present time just as many people work a 35-hour week as work a 40-hour week, Mr. Rennick predicted by 1980, a 30-hour week of four days duration, meaning that the drug stores, which will still have to keep open six or seven days per week, will have to make do with lots less manpower, proportionately, than it has today.

THE DOCTOR AND THE PHARMACEUTICAL MANUFACTURER

(Continued from page 35)

We in the medical profession, I am certain, are not entirely without blame for we were just as enthusiastic about their use as you were. Neither of us, however, must be a party to such practices and go off enthusiastically on a tangent which is dramatic but not purely scientific.

We thought in our office that it might be interesting to you to note the number of advertising pieces that come to us, mostly by mail, each day. Consequently these were counted for a period of three weeks. For the three weeks prior to my coming here, we received an average of 22 pieces of medical advertising in our office every day. One can easily understand that a busy doctor cannot even look at all of the titles of the leaflets or the company sending them, let alone read them. Since I have been particularly interested in this subject, I have read many more of them than I usually do and I must say that unless it is something that the doctor is specifically looking for, this material is side-tracked long before it gets to his desk and filed in either his or his secretary's waste basket. As a matter of fact, so far as samples are concerned, I have a suspicion that many of them in doctor's offices are handled in exactly the same way.

I do not know the answer to this problem. I suspect, however, that promotional leaflets and samples by mail constitute the least effective way of reaching the busy physician with information about your products.

Nor are we helped by many of your labels which give full prominence to the proprietary name but inadequate recognition to the chemical name. Proprietary names are extremely important to you, I know, to your sales and to your competitive position in industry as well as your long run prestige with the public. We do not object ever to your use of them and we use them provided the chemical formula is clearly visible on the package or in the advertising material. We, as doctors, want to know what the material is and sometimes it is extremely difficult to find out.

Take, for example, anti-histamine preparations. The Physician's Desk Reference published by Medical Economics lists approximately 40 different items. If your representatives have sold us on your particular brand, we will probably not remember many of the other trade names. We are going to use the one that has been brought to our attention by your representative or ones that appeared in medical literature.

When we get to the multi-vitamin products, the situation is ludicrous. The reference lists 140 different items. The naming of these products varies from the letter A to the letter Z with only six letters of the alphabet missing.

Mandelic Acid, the urinary tract antiseptic, is masquerading under many proprietary names but they are all Mandelic Acid. Perhaps this is all necessary to guard the product so that there will be no substitution on the doctor's prescription—I do not know.

The doctor, as I have indicated, receives an enormous amount of printed material, far too much for him or any other one man to read; and, yet, I do think that there is another area wherein simple and briefly printed messages could be of great help to us and to the public. This lies within the area of economic information. Far too often we hear the patient complain of the fact that drugs cost too much. I do not pretend to be an expert on economics of pharmaceutical manufacturing. As physicians, we are all aware of the many long and expensive steps that are necessary in the development, the manufacture, and the distribution of a new, worthwhile drug.

These facts, it seems to me, should be known to the patient. But, neither the patient nor the doctor should have to wade through a long series of pamphlets produced by the pharmaceutical manufacturers to get this information. Is not the basic story of each of your new products sufficiently similar so that a single pamphlet on this subject could be prepared and readily available in the doctor's waiting room.

The new booklet "I Hate to Buy Drugs—But" by Donald Cooley is one of the greatest possible advances along this line. As you know, this booklet was prepared by the National Pharmaceutical Council under the direction of Newell Stewart. If, when a new product comes out, each pharmaceutical manufacturer would tell in a simply told story the reasons for the cost and the tremendous amount of work involved in preparing such a product—which information could then be given in a leaflet or small booklet to each patient at the drug store when he receives the product or be made readily available in the doctor's office—the patient would then be able to realize the reason for the high costs of some medication and this would be a splendid public relations project, not only for you but for the pharmacists and the doctor.

We try to make it a practice in our office if we are prescribing a drug, for instance one of the new antibiotics that we know is going to cost $7 or $8 for 16 capsules, to explain that it is a relatively expensive medication because it is an expensive product to produce and yet we feel that it is well worth the cost to the patient insofar as his particular illness is concerned. When a little time is taken to explain this fact to the patient, he seldom complains. All he wants is to realize that he is getting his money's worth.

Now, since a good many drugs fall by the wayside, either victims of fad or through clinical study which disproves their value, the question is posed as to how the busy physician can best evaluate the proposed additions to his therapeutic armamentarium. Many methods have been suggested but they have all as their basis as thorough an understanding as possible of the pharmacologic rationale of the use of these products. Be it experimental evidence presented in leading articles of a reputable journal, medical society meeting, lecture series, television, convention, or careful consideration to the phrases of the medical service representative coming to us from you, the physician should adopt the most feasible means of acquiring this knowledge.

Certainly, one of the most important method is by contact with your detail men. May I point out to you that of all your contacts with the medical profession, your detail man is the most important.

The physician is frequently confronted with the necessity of making a choice among several drugs to be used in treating a specific disease. His choice, of course, should be predicated upon his pharmacological knowledge as well as available clinical data. His task is not always a simple one. His choice is most frequently made—all other things being equal—on the basis of his relationship, good or otherwise, with a certain pharmaceutical house and its representative.

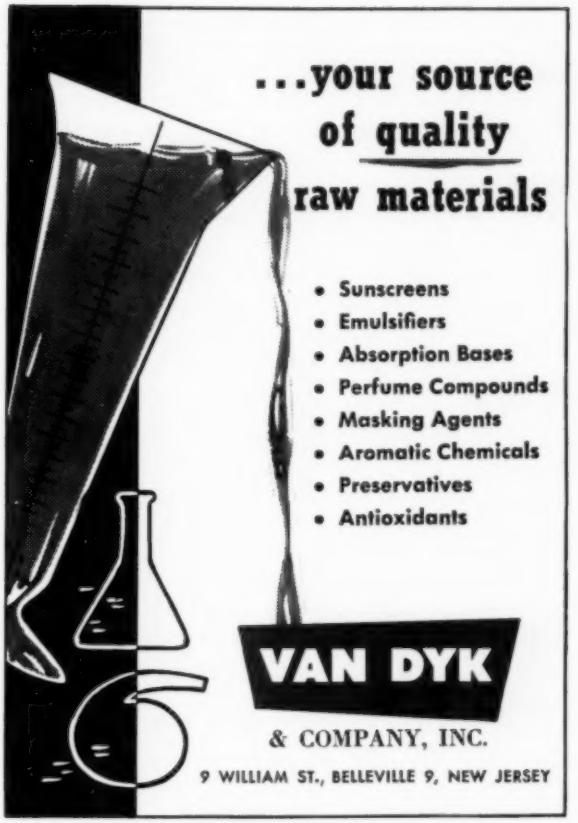
THE ACID MANTLE FACTOR IN TOPICAL APPLICATION

(Continued from page 43)

in the sweat, carbonic acid, keratin and its releasing products, and neutralizing sebum.[15] The acid pH and alkalinizing ability of the skin are due, in a lesser degree, to volatile fatty acids formed from lactic acid by microorganisms. Rothman[6] states that this reaction accounts for the more rapid neutralization of alkalies in hot weather.

It has been found that when dilute acids or alkalies are brought in contact with the skin surface, the induced change is temporary, and the original acid reaction is restored in about two to four hours. Rapid acid neutralization accompanies good acid resistance, and the capacity and resistance are usually present in the same individual.[16-15] Burckhardt and Baumle[17] demonstrated, in controlled studies, that individuals whose skin is rather sluggish in neutralizing alkalies are likely to suffer damage from contact with alkalies, which is significant in soap and detergent dermatitis.

Keratin contributes to surface acidity although early studies reported its poor water solubility. Modern work with potentiometric measurements emphasizes its importance in maintaining a normal cutaneous reaction. Bergein and Corbleet[3] recently demonstrated that the keratin layer itself is acid, and in studies of the electrical behavior of the skin, it has been corrollated that the more distal the epidermal tissues are from the blood supply, the more acid it is in nature.



PRIVATE FORMULA
Tablets and Capsules
BY THE THOUSANDS---
OR BY THE MILLIONS
your product accurately compounded
Over 40 years' experience enables us to render you prompt, accurate, and dependable service in the manufacture of your tablets and hard shell capsules. Our central location expedites delivery to any point in the country. Furnished bulk or packaged.
Vitamin Tablets and Capsules — Tablets — Ointments — Powders
We Invite Your Inquiries
Standard Pharmacal Co.
OF CHICAGO
PRIVATE FORMULA MANUFACTURERS
M. F. Charley, President
847-853 W. JACKSON BLVD.
CHICAGO 7, ILL.

Van Scott and Lyon,[13] by experimental studies with dry, powdered plantar keratin, showed the denaturing effect of one per cent concentration of soaps and detergents. These alkali solutions disintegrate keratin by rupturing the polypeptide chains with release of sulfhydryl groups. Flesch[14] aided in the identification of these groups.

The presence of sebum may interpose a slight protective action against these defatting substances. In this unique project, the buffering action of keratin was demonstrated by the reduction of the alkalinity of many popular soap and detergent solutions in vitro.

Burckhardt[17] believes that the acid mantle factor, which participates in the protective skin layer, is furnished by water dispersible acid as lactic acid, fatty acids, amino acids, uric acid, oleic acids, acid salts, and electrolytes. His studies indicate that the alkali neutralization is primarily the function of the amphoteric amino acids of the keratin, and, as a result, the alkali neutralization depends upon the maintenance of the normal keratinization. Therefore, any constitutional disturbances may contribute to the impairment of normal keratinization, as vitamin A dysfunction.

Deviations of the pH in Pathologic Skin

Two different aspects of surface acidity are considered in determining the pH deviations in pathologic skin changes:

1. A predisposition to disease may exist concurrent with regional or constitutional alterations in the surface pH.
2. The surface pH may be altered by a disease process in the skin itself.

Marchionini[8] emphasized the first aspect, although investigators have pointed out that he did not present sufficient evidence to explain the role of low acidity in bacterial and fungal infections.

Except in severe pathological conditions, the pH of the blood remains constant, and alterations in the acid-base intake affects only the blood alkali reserve.[10,11,16] These alterations, however, may have a more permanent effect on the tissues, especially the skin. The fruity odor of the skin in diabetic acidosis is probably due to excretion of acetone bodies.

In eczematous conditions of the skin, the acidity of the cutaneous surface decreases. This reduction has been shown not only on the affected areas but on normal skin and in different parts of the body.[19] In a study demonstrating the lactate-lactic acid buffer system of the sweat, it was found that when xeroderma is associated with eczema, the skin pH is raised because eccrine sweat is diminished and the buffer system is imperfect.[6] On "dry" skin, such as the type frequently associated with atopic dermatitis, the pH has a tendency to rise over the entire body surface.[10]

Sulzberger and Herrmann[20] have described areas of dyshidrosis in the antecubital and popliteal fossa of patients afflicted with atopic dermatitis resulting in alteration of the pH. In patients afflicted with alkali dermatitis, readings as high as a pH 12 have been obtained on the skin of the hands. In such cases, the ability of the horny layer to neutralize alkali is inherently inadequate.[6,11] Persons with industrial eczema are often unusually sensitive to both acids and alkalies, while atopic individuals present normal sensitivity to both.[18,19]

It has been found that washing the hands with soap, detergents, and water increases the pH from one to two units for one to three hours. In certain dermatoses, this increase may be greater and more prolonged. In cases of eczematous patients, the skin, which has been washed with soap, did not regain its original pH for 10 to 24 hours respectively. Since soaps and detergents are alkaline, many authors attribute the above reaction to irritation caused by soap, and defatting of the natural oils of the skin contained in sebum. Superfatting the soap does not affect its alkalinity; however, it may diminish drying. Commercial soaps contain numerous additional substances as extenders, many of which increase their alkalinity, and thus increase the pH of the skin in conjunction with affecting the keratin barrier.

Organic bases, especially triethanolamine, are said to diminish alkalinity but are known to produce less effective detergents.[19] Several dermatologists believe that the fatty acid radical is a primary irritant. Blank[4] showed that the lower the molecular weight of the acid, the greater the sensitizing potential. Thus, stearic and palmitic acids are relatively non-irritating, whereas lauric acid is the most irritating of the entire series. Soaps prepared from coconut oil, which has a high content of lauric acid, are more irritating than the previous. Both the alkalinity and the nature of the fatty acid radical contribute to the irritative effects of the soap. This abnormal reaction of the inflamed skin to soap may persist for several weeks after all visible evidence of skin irritation has disappeared. Lobitz[22] found that eczematous tissue may remain alkaline for at least three weeks after the skin lesions clear.

In a study of cement eczema, Burckhardt and Baumle[17] found that impairment of the skin to neutralize alkali was not only the prime etiologic factor, but it varied from individual to individual, depending somewhat on the quality of protein in the horny layer. Mechanical injury to the skin increases pH concentration because the deeper layers are more alkaline than the horny layers, permitting diffusion. These phenomena may also exist in housewives'eczema.

Increased acidity has been found in atrophic processes, desquamative disorders, and pyogenic dermatoses with true pus formation.[10] Marchionini[8] reported originally that pH surface reactions were strongly acid in cases of acute pyogenic inflammations. The pH on the surface of the pyogenic lesions is not substantially altered if the superficial barrier is not broken. However, if the barrier, which hinders the diffusion of alkaline or other fluids to the surface, becomes impaired as in the case of exfoliative dermatitis or acute eczematous

dermatitis, the pH values will noticeably shift toward the alkaline side.[3,5,6] Hermann confirmed similar pH changes in many cases of tinea capitis among children.

Therapeutic Usage

Gross[23] studied a large series of cases of housewives' eczema which he believes may be a variant of so-called nummular eczema. This type of dermatitis shows an impairment of the alkali neutralizing power of the skin. His findings also demonstrate that the alkaline type of contact dermatitis, atopic dermatitis, and patients with eczematous eruptions showed a predominance of normal alkali neutralization.

A cream containing a buffered aluminum acetate solution in a water miscible base helped to maintain the normal pH after washing with soap and alkalies. Various organic acids, as acetic acid, citric acid, lactic acid, can be utilized as buffers. Occasionally, a salt as aluminum acetate serves as a buffering agent.

Several investigators have claimed the increasing effectiveness on the skin of medicaments as antibiotics, steroids, and silicones when introduced in an acid mantle base. Recently a buffered hand lotion and skin preparing lotion have appeared on the cosmetic horizon.

The study reported by Lubowe,[24] December 1954, at the meeting of the Society of Cosmetic Chemists, introduced an evaluation of silicone oils dispersed in an acid mantle cream and lotion. It was the author's impression that the silicone-acid mantle cream was more effective in maintenance of normal skin hygiene in patients with dermatitis due to soap, alkali, and detergents.

A series of fifty-five cases was treated with antiseptic compresses, steroid antibiotic ointment, and superficial x-ray therapy. After these patients were cleared of their dermatoses, they have been maintained for six months with 15 per cent silicone concentration dispersed in an oil and water emulsion which has been buffered with one per cent citric acid. Allantoin, in small concentrations, was added as a mild keratoplastic agent. No evidences of local irritation have been observed. However, in a small group of patients, in which an acid buffer cream has been used with an acetic salt, occasional irritations were noted by the patient.

To determine the effect of various buffered cosmetic and pharmaceutical preparations upon the washed epidermis, we conducted a pilot study.

Six volunteers were used in this study. The pH of the forearms was taken before washing. The anterior surface of the forearms was then washed with various types of soap, as Ivory, transparent, superfatted and detergent cake. The pH readings of the dried surfaces were taken at regular intervals. After the pH readings were recorded on the six different site areas, various buffered lotions and creams, boric acid ointment, and ammoniated mercury ointment U.S.P. were rubbed into the studied sites. The pH readings were then taken immediately, thirty minutes, sixty minutes, and 120 minutes after.

New Product Possibilities

PROPHENPYRIDAMINE MALEATE

The antihistaminic with low toxicity — high antihistaminic activity. Effective against a wide variety of allergic disorders.

NEOMYCIN SULFATE

The antibiotic with an unusual degree of stability. For topical, oral and parenteral use.

VITAMIN B_{12} CRYSTALLINE with Intrinsic Factor Concentrate

also

VITAMIN B_{12} ORAL GRADE SOLIDS with Intrinsic Factor Concentrate

The Oral U.S.P. unit accepted by the U.S.P. Anti-Anemia Preparations Advisory Board.

High purity Low bulk

Bulk Standardized at 50 milligrams per Oral U.S.P. Unit

a dependable source for hormones and fine chemicals

VITAMERICAN OIL CORPORATION, 1 John Street, Paterson 2, N. J.

GLASS DROPPERS

For the finest in quality and service we invite your inquiries.

Samples and prices gladly submitted

Glass Products Co.
Established 1922
Vineland, N. J.

The results of this study indicate that there may exist variations of the normal pH of the skin in different body areas. Following the use of various soaps, there is an increase in the alkalinity of the washed area from one to two units. This increase in alkalinity may persist from two to four hours. The application of acid buffered lotions or creams to washed areas of the skin reduces the pH.

As a result of this investigation and other reported studies,[12-23] we believe it is difficult to predict with mathematical accuracy the percentage of neutralization that will follow the topical application of acid buffered preparations, due to the variable individual factors and physiological capacity of the cutaneous tissues. There are other factors involved in producing a protective acid mantle as the fats of the sebum which are not affected by acid buffered preparations. Therefore, it is advisable to continue further observation in this field to determine the usage value of acid buffered preparations as prophylactic and therapeutic adjuvants. The addition of silicones and vegetable and animal oils to the above mentioned topical agents may be the ideal combinations.

REFERENCES

1. Ziemssen, H. V., *Handbook of Skin Diseases*, p. 68, W. Wood & Company, New York, 1885.
2. Heuss, E., die reaktion des schweisses beim gesunden, Menschen. *Montash. f.* prakt. *Dermat.*, **14**, 343, 1892.
3. Bergeim, O., and Cornbleet, T., Acidity of the scalp; nature and possible relation to seborrhea. *Arch. Derm. & Syph.*, **56**, 448, 1947.
4. Blank, I. H., Measurement of pH of the skin surface. I. Technique. *J. Invest. Derm.*, **2**, 67, 1939.
5. Hermann, F., Behrendt, H., and Karp, F. L., On the acidity of the surface of the scalp and other areas of the skin in children. *J. Invest. Derm.*, **7**, 215, 1946.
6. Rothman, S., *Physiology and Biochemistry of the Skin*. The University of Chicago Press, Chicago, 1954.
7. Hurley, H. J., Jr., Shelley, W. B., and Koelle, G. B., The distribution of cholinesterases in human skin, with special reference to eccrine and apocrine sweat glands. *J. Invest. Derm.*, **21**, 139, 1953.
8. Marchionini, A., Physikalisch-chemische Untersuchungen uber ekkrinen und apokrinen Schweiss. *Schweiz. med. Ucknschr.*, **58**, 1055, 1928.
9. Schade, H., and Marchionini, A., Der Saurmantel der Haut (nach Gasketennessungen). *Klin. Wchnschr.*, **7**, 12, 1928.
10. Anderson, D. S., The acid-base balance of the skin. *Brit. J. Derm.*, **631**, 283, 1951.
11. Goldsmith, N., and Hellier, F. F., *Recent Advances in Dermatology*. J. & A. Churchill Ltd., London, 2nd Edition, 1954.
12. Jacobi, O., and Heinrich, H., The acid mantle of the skin. *Proceedings of the Scientific Section of the ToiletGoods Association*, New York, May, 1954.
13. VanScott, E. J., and Lyon, J. B., A chemical measure of the effect of soaps and detergents on the skin. *J. Invest. Derm.*, **21**, 199, 1953.
14. Flesch, P., and Kun, E., A colorimetric method for determination of sulfhydryl groups in tissue homogenates by 1-(4-chloromercuriphenylazo)-Naphthol-2. *Proc. Soc. Exp. Biol. & Med.*, **74**, 249, 1950.
15. Wohnlich, H. I., Der einfluss der schweiss sekretion auf die alkalineutralisationskraft der Haut. *Arch. f. Derm. u. Syph.*, **187**, 377, 1948.
16. Klauder, J. V., and Gross, B. A., Actual causes of certain occupational dermatoses. *Arch. Derm. Syph.*, **63**, 1, 1951.
17. Burckhardt, W., and Baumle, W., Die bexieuung der Saureempfindlichkeit zur Alkaliempfindlichkeit der Haut. *Dermatologica*, **102**, 294, 1951.
18. Draize, J. H., The determination of the pH of the skin of man and common in laboratory animals. *J. Invest. Derm.*, **5**, 77, 1942.
19. Calvery, H. O., Draize, J. H., and Laug, E. P., The metabolism and permeability of normal skin. *Physiol. Rev.*, **26**, 495, 1946.
20. Sulzberger, M. B., and Herrmann, F., *The Clinical Significance of Disturbances in the Delivery of Sweat*. Charles C. Thomas Pub., Springfield, Illinois, 1954.
21. Whitcomb, F. C., and Arnold, L., Relationship between acid base equilibrium and endogenous bacterio-flora of skin. *J. Invest. Derm.*, **4**, 317, 1941.
22. Lobitz, W. C., and Mason, H. L., Chemistry of palmar sweat. VII. Discussion of studies on chloride, urea, glucose, uric acid, ammonia nitrogen and creatinine. *Arch. Derm. & Syph.*, **57**, 907, 1948.
23. Gross, P., Blade, M. O., Chester, B. J., and Sloane, M. B., Dermatitis of housewives as variant of nummular eczema. *Arch. Derm. & Syph.*, **70**, 94, 1954.
24. Lubowe, I. I., Skin toxicity and sensitivity of cosmetics and cosmetic bases. *Proc. Chemical Specialties Manufacturers Association, Inc.*, Cincinnati, Ohio, May 24, 1954.

A STUDY OF ANTI-DANDRUFF AGENTS

(Continued from page 45)

The value of scalp products designed to control dandruff because they contain either hormones or nutritional elements has not been established. The theory behind the products may be sound, yet no satisfactory practical method for testing their worth has been developed.

Anti-dandruff preparations designed primarily to combat the infectious component of dandruff are numerous. They usually contain in addition to specific germicidal and/or germistatic agents, other dermatological medicants to increase scaling of the scalp or to stimulate the scalp circulation.

The prime reason most emphasis has been placed on the anti-infectious activity of anti-dandruff preparations is that this is something that can be measured accurately. As long as one remembers that the microbial component is just one phase of dandruff and that the importance of that one phase is not fully understood, the bacteriological approach to the study of anti-dandruff products should be considered a good screening test. It is of little import how many myriads of bacteria are on the scalp at any one time, or how vast a number of sub-species they may be cultivated into. Bacteriological counts ranging from 3200 organisms down to 170 organisms per sq. cm. have been consistently reported and counts ranging from fewer than 100 to several hundred thousand organisms per sq. cm. have been just as enthusiastically claimed. Actually, all of us have shown that bacteria are present. The number of species or subspecies obtained is subject to the microorganisms as well as the investigator's whim. Not only do these species vary with the types of culture conditions (aerobic or anaerobic), area of sample (coliform or non coliform), sample techniques (swab, cup, abrasion, biopsy), but also with the potential variability and pleomorphic ability of the microorganisms themselves.[5] In our laboratory, we use three culture media routinely; brain-heart extract agar, Sabouraud's maltose agar, Pityrosporum ovale media (Benham's Oleic Acid—Wort Agar media). We find either a Staphylococcus albus or Staphylococcus aureus or a mixture of both on all individuals. These organisms grow well on brain-heart extract. We infrequently find fungi except in known scalp ring worm cases. Those fungi and molds that we do obtain, grow well on Sabouraud's agar. In private practice, only an occasional Candida (monilia) appears on this media but we use it routinely because many of our clinic patients are children, whom we screen regularly for the fungus infections. The "bottle bacillus" or Pityrosporum ovale is of special interest to us because on the basis of our broad experience with this organism, we tend to associate it with dandruff more frequently. When scalp cultures are made on the oleic acid fortified Wort agar media we find "bottle bacilli" present in well over half of the cases. For comparative numerical study, conditions can be standardized. The standards in our laboratory are fixed and rigid, and on this basis we can make anti-microbial comparisons of anti-dandruff products.

If a product is bacteriologically potent in the laboratory, it must then meet other standards before it can be presumed to have potentialities as an anti-dandruff

agent. In addition to the fact that it must be active against the organisms we ourselves find associated with dandruff, it must:

1. Materially reduce the numbers of eliminate some species of these organisms when used on the scalp.
2. Relieve, improve or eliminate dandruff in the presumed normal and in the individual with seborrhea dermatitis.

To establish these points, we have utilized first, a use test on a number of normal individuals to ascertain the effects of a particular preparation upon the scalp condition and then to correlate these data with the before and after bacteriological culture studies. The pattern of study is that which was used to establish the value of germicides of the hexachlorophene type. Some of our earlier work in this direction was reported to this group some years ago. At that time, we were surveying the extent of G-11® applicability and so were able to study the effect of this agent clinically and bacteriologically on average scalps.[6] During the use test, we studied the antiseptic and inhibitory effects of hair dressing applications on the organisms normally inhabiting the human scalp (particularly Pityrosporum ovale and the Gram positive cocci).

A stiff sterile tooth brush was scraped vigorously through the entire scalp. Brushing was started at one temple and carried over the scalp to the other temple. Pressure was applied in order to release adherent dandruff. This total head brushing did not collect all bacteria from the scalp but it certainly gathered a representative sample of whatever was there at the time. After sampling, the loaded brush was dropped into a test tube containing sufficient sterile distilled water to adequately bathe the bristles (6 ml.). The tube was stoppered and agitated briskly, then 1 ml. aliquots were plated on prepared selective bacteriological media. Selective media were chosen for the different types of organisms studied. Nutrient agar (brain-heart extract) was used for total aerobic bacteria, Sabouraud's maltose agar for bacteria, fungi and molds, and the special Wort agar for selective culture of Pityrosporum ovale. The inoculated plates were incubated for sufficiant time to assure optimum counting growth. Readings were made at 24, 48, 72 and 96 hours for colony counts. Cultural study has required longer incubation periods.

Since a use test of this type does not establish causal relationship of the bacteria to the dandruff or prove anti-dandruff activity, in our next study we attempted to make a clinical evaluation of the scalps of the subjects. One hundred young men had a rather complete record kept of the condition of their hair and scalp at the time of each bacteriological sampling. The components judged were the extent of baldness, amount of loose dandruff, quantity of adherent scale, and the presence or absence of seborrheic dermatitis. The conditions were graded as none, mild to moderate, and severe. Attempts were made at quantitation. For example, baldness was graded as follows: zero to five per cent, none; five to 25 per cent, mild to moderate;

PERL MACHINES

FOR EVERY FILLING JOB

MODEL 700
PISTON FILLING MACHINES
Power or hand operated for jars and tubes up to 32 ozs. Up to 40 perfect fills a minute with high accuracy and trouble-free performance.
Perfect for filling Aerosols.

MODEL 701
TUBE CLOSING MACHINES
Semi and fully automatic, for tubes up to 2" diameter. Up to 40 tubes a minute without or with crimping.

COMBINED FILLING & CLOSING MACHINES
Fully and Semi-Automatic

PERL MACHINES ARE USED BY MANY OF THE WORLD'S FOREMOST MANUFACTURERS

A COMPLETE LINE OF MACHINES FOR
Bottle Filling • Tube Filling & Closing
Can Filling • Bottle Cleaning

Write for Catalog E today

PERL MACHINE MFG. CO., INC.
68 Jay Street • Brooklyn, N. Y.

Pantone "double-duty" merchandisers sell more Flame-Glo lipsticks

PANTONE
PRESS, INC.
461 EIGHTH AVENUE, NEW YORK 1
CHICAGO LOS ANGELES

and over 25 per cent, severe. Figure 1 shows the observed data. The black columns indicate the number of persons in each grade and category with positive cultures for Pityrosporum ovale. It is quite apparent that many of the subjects with no evidence of hair loss, dandruff, or seborrhea showed positive cultures for the organisms, but equally as apparent is the fact that an increase in adherent scale is associated with an increased frequency of positive culture.[5]

These studies on the average scalp were quite informative, but still not sufficiently clear cut to establish the relative therapeutic merit of one or another specific anti-dandruff material. We have now approached the problem from the standpoint of the recognizably diseased scalp and the specific laboratory action of the product under study against isolates of typical organisms found upon these scalps which in our opinion are intimately associated with the changeover from normal scalp with pityriasis simplex to seborrheic dermatitis.

We find that seborreic dermatitis invariably shows either Staphylococcus aureus or albus and very frequently one or the other of the Pityrosporum ovale group, therefore our primary laboratory screening has been against these types. The laboratory technique is the simple cup plate inhibition zone measurement. We use the Guiteras sunken mold plate on the desired solid media. Data comparisons tabulated for several of the currently popular type of anti-dandruff agents are shown in Table 1. Here measurements against the Staphylococcus aureus, Staphylococcus albus and several of the Pityrosporum ovale types are shown. It is apparent that to obtain the broadest spectrum, either a mercurial or some type of sulfur containing compound is to be desired. This, of course, confirms clinical experience, because ammoniated mercury or sulfur have been standbys for years. The behavior of chlorinated phenols, quaternary ammonium compounds and anionic detergents indicates their failure to adequately control the Pityrosporum ovale. The sodium sulfacetamide preparation has not been satisfactory in my own clinical experience although it has been favorably reported upon by others. The last two are the most active of the group shown and these with others have been compared on patients with seborrheic dermatitis of the scalp.

The patients are all individuals who have come to the office for treatment of scalp conditions. Our routine culture has been upon the three media, brain-heart, Sabouraud's maltose and Benham's Wort agar. Sampling thoroughly with a stiff sterile brush is not practical with the private patient, therefore samples have been taken directly from the scalp with a small curette. The sampling area, usually from a point of visible scale is washed with sterile water, then scraped rather vigorously with the curette. I am not as satisfied with the method as I have been with the tooth brush technique, but it is practical and has proved reasonably satisfactory.

The patients have been separated as to sex. The types of micro-organisms cultured have been separated into our three basic study groups, and one additional more general category. Fourteen (14) women and 17 men constitute the series. The only really impressive finding other than the fact that all individuals harbored the Staphylococcus is the apparent male dominance of Pityrosporum susceptibility. This has been suspected before and if definitely established may be a lead to more than the answer to dandruff. These cultures are from individuals who had their scalp condition for some time. Obviously most individuals had had previous scalp care, either of their own volition or from some referring physician. Nevertheless, the culture pattern is very similar to that of the non-seborrheic individual. This pattern is again that of the hair and not of the glabrous skin. Even the most closely related

TABLE I

Laboratory Comparison of Germicidal Agents
Tested Against Organisms Associated with Seborrhea

Agent	Concentration	Cup Plate Assay — Inhibition Zones Millimeters				
		Staph. aureus	Staph. albus	Pityrosporum ovale Type 1	Type 2	Type 4
Hexachlorophene (G-11)	0.35 per cent lotion	24	30	slight	0	0
Quaternary Ammonium type	0.1 per cent aqueous	30	32	23	slight	slight
Sodium alkyl sulfate	1.0 per cent aqueous	22	17	slight	slight	slight
Merthiolate	0.01 per cent aqueous	23	20	25	—	—
Phenyl mercuric acetate	0.01 per cent aqueous	23	26	39	—	—
Sodium sulfacetamide	10% aqueous	slight	20	28	slight	slight
Selenium Sulfide	2.5 per cent aqueous susp.	34	27	38	37	30
Experimental Sulfur Compound	3 per cent alcohol	56	41	40	43	35

area, namely, the ear canals of these same individuals does not show the flora characteristic of seborrhea. One might join others in properly doubting the seborrheic cause of otitis externa from these data.[7]

The evolution of our methodology then, has given us these criteria for comparative evaluation of anti-dandruff agents. First, the product must have a beneficial effect upon the particular seborrheic case being treated and secondly the contaminating bacterial flora of the individual's scalp must be influened satisfactorily. All effective agents first seem to eliminate the Pityrosporum ovale types, then shift the Staphylococcal pattern from the Staphylococcus aureus to the Staphylococcus albus type. This would be a change toward lower pathogenicity. On this basis, before and after use cultures plus critical clinical observations and records are sufficient to establish a product's merit.

If one single product is to be set up as a therapeutic standard, perhaps the choice should be the prescription item Selsun. This material, a Selenium sulfide suspension is quite effective. When correctly used, satisfactory clinical results, that is, remissions, have been reported in as many as 94 per cent of cases with simple dry dandruff, and in 82 per cent of cases with oily dandruff.[8] The percentage is not quite so good for the more severe types of seborrheic dermatitis, nor have we found the drug completely bland from the standpoint of irritation and sensitivity, nevertheless it is better than anything else that has been used on as large a scale. The great advantage of Selenium sulfide is its mode of application, which is convenient and non messy. Its greatest disadvantage is that it causes excessive oiliness of the scalp in over 1/3 of the users. This is particularly annoying to women because they frequently come to the office initially because their hair is very oily and difficult to keep attractively groomed. Men, on the other hand are primarily concerned with alopecia and will usually put up with excessive oil. We have found that there are better materials than Selenium sulfide and that these materials will probably not be restricted as Selenium sulfide now is to purely professional use because of possible toxicity.

Whether our methods can be refined to permit a more rapid comparison of anti-dandruff effects of different materials without long clinical studies I do not know, but to date, the most dependable test is still that of trial, and the most valuable result is the fact that a product is effective where needed.

REFERENCES

1. Behrman, H. T., *The Scalp in Health and Disease*. C. V. Mosby, Co., St. Louis, 1952, pp. 220-243.
2. Goldzieher, J. W., Rowls, W. B., Roberts, I. S. and Goldzieher, M. A., Studies on Aging; Correlation of Skin Morphology with Age and Hormone Excretion, *J. of Gerontology*, **7**, 47, Jan. 1952.
3. Reddish, G. F., The Etiology of Infectious Dandruff, *J. Soc. Cos. Chem.*, **3**, 90, August, 1952.
4. Pachtman, E. A., Vicker, E. E. and Brunner, M. J., The Bacteriological Flora in Seborrheic Dermatitis, *J. OF Invest. Derm.* **22**, 389, May, 1954.
5. Spoor, H. J., Traub, E. F. and Bell, M., Pityrosporum Ovale Types Cultured from Normol and Seborrheic Subjects, *A.M.A. Arch. Dermat. & Syph.*, **69**, 323, March, 1954.
6. Spoor, H. J. and Traub, E. F., Efficacy of Hexachlorophene in Toilet Goods Preparations, *This Journal*, No. **16**, Dec. 1951.
7. McLaurin, J. W., Otitis Externa: The Facts of the Matter, *J.A.M.A.* **154**, 207, Jan. 1954.
8. Bereston, E. S., Use of Selenium Sulfide Shampoo in Seborrheic Dermatitis, *J.A.M.A.*, **156**, 1246, Nov. 1954.

MOULDS

LIPSTICK - COLOGNE - DEODORANT
STYPTIC PENCILS - MASCARA
SUPPOSITORIES

PROGRESSIVE LABELING MACHINE, Inc.
137 West 22nd St., New York 11, N. Y.

ROUGE COMPACT POWDER
PUNCHES FOR TABLETS
also
FOOT & POWER PRESSES FURNISHED

DIES

falba
Reg. U S. and Foreign Countries
"THE HEART OF LANOLINE"
THE OXYCHOLESTERIN
ABSORPTION BASE
Suggested Formulae on Request
Pfaltz & Bauer, Inc.
EMPIRE STATE BUILDING, NEW YORK

DRYING TIME
CAN BE
CUT IN HALF
WITH HIGH-SPEED
COLTON OVENS
RECOVER ENTIRE OVEN INVESTMENT
IN A FEW MONTHS THROUGH SAVINGS
ARTHUR COLTON COMPANY
Established 1887
Div. Snyder Tool & Engineering Company
3495 EAST LAFAYETTE • DETROIT 7, MICHIGAN

Professional Service

Rates: $8.00 one inch deep by one column wide.

***ARLINCO RESEARCH LABORATORY, INC.**
Research, Formulation and Application to the Industry.
Ethical Pharmaceuticals, Drugs, Cosmetics and Perfumery.
333 W. 52nd St., New York 19, N. Y.
PLaza 7-3861
*A-R-L Inco means: Applied Research Laboratory, Incorp.

LEBERCO LABORATORIES
Hormone Assays • Drug Assay
Pharmaceutical and Cosmetic Research
Sterility Tests • Toxicity Studies
Send for information concerning our services
125 HAWTHORNE ST., ROSELLE PARK, N. J.

RESEARCH LABORATORIES
FOSTER D. SNELL INC.
29 WEST 15th ST. NEW YORK 11, N.Y. — WA 4-8800
CHEMISTS • ENGINEERS

SEIL, PUTT & RUSBY, INC.
Analytical, Consulting, Research Chemists
Established 1921
Specialists in analysis of Drugs, Cosmetics Essential Oils.
Ask for Estimates-Quotations-No Obligation
Lab's: 16 East 34th Street, New York 16, N.Y.
Telephone Murray Hill 3-6368

WISCONSIN ALUMNI RESEARCH FOUNDATION
Project Research, Consultation, and Production Control Services in Biochemistry, Chemistry, Bacteriology, Pharmacology, and Insecticide Testing and Screening
WRITE FOR PRICE SCHEDULE
WISCONSIN ALUMNI RESEARCH FOUNDATION
P.O. BOX 2059 MADISON 5, WISCONSIN

TRUESDAIL Laboratories, Inc.
Write for Brochure-4101 N. Figueroa St.
Los Angeles 65, Calif. • CApitol 4148
Product & Process Development
Toxicology
Sterility Tests
CHEMISTS • BACTERIOLOGISTS • ENGINEERS
Charter Member ACIL

Classified Advertising

Rates: $2.50 minimum order for 20 words or less; 5c for each word over 20. 25c for box number. Payable in advance.

Drug & Cosmetic Industry, 101 West 31st St., New York 1, N. Y.

Machinery and Equipment For Sale

UNION Rebuilt Machinery
Established 1912
Modern Rebuilt Machinery
At Tremendous Savings

Fitzpatrick "D" S.S. Comminutor.
Stokes RBB, D3 Tablet Machines.
Colton 2RP, 3RP, 5½T Tablet Machines.
Capen 4-Head, Resina LC Auto. Cappers.
Copper Coating Pans, 24" to 40" diameter.
B. P. 2 to 200 gal. Double Arm Mixers.
Pfaudler King Model C9, Horix, Elgin Stainless Steel Rotary, MRM Fillers.
Pony M, MX, ML; Ermold, World, Semi and Pneumatic Auto. Labelers.
Burt Wraparound Labeler, (to 1 gal.)
Day Powder Mixers, 15 to 10,000 lbs. cap.
Rotex, Robinson, Tyler Hum-mer, Gayco, Raymond, Selectro, Great Western Sifters.
Mikro 1SH, 2TH, 3TH, 4TH Pulverizers.
Day 50 gal. Gearless Pony Mixer.
Hobart, Read, Glenn 10 to 120 qt. Mixers.
Podbelniak 6080 S.S. Solvent Extractor.
S. & S. G1, G2, G6, HG88 Powder Fillers.
Hayssen, Package Machy., Oliver, Hudson Sharp, Scandia, Miller Wrappers.

IMMEDIATE DELIVERIES

Tell Us Your Requirements
Complete Details and Quotations Promptly Submitted

UNION STANDARD EQUIPMENT CO.
318-322 Lafayette St., New York 12, N. Y.

FOR SALE: 1-Baker Perkins S.S. jacketed Mixer 35 gal.; 1-Day S.S. Mixer 50 gal.; 9-Stokes DDS2, DD2, BB2, D4, D3 and B2 Rotary Tablet Machines: 1-Mikro No. 2 TH S.S. Pulverizer; 6-Rotex Sifters 40"x120", 40"x84", 40"x56", 20"x48" single and double deck; 1-Robinson 4000 lbs. heavy duty Powder Mixer; 1-Day 2000 lbs. Powder Mixer; 2-Shriver 30" and 24" aluminum P&F Filter Presses; 3-Groen 150 and 125 gal. S.S. agitated Kettles; 4-Devine Vacuum Shelf Dryers 4, 6, 10 and 17 shelves. Partial Listing. Send for "News Flash", BRILL EQUIPMENT COMPANY, 2402 Third Avenue, New York 51, New York.

Machinery and Equipment For Sale

FOR SALE: Eppenbach QV-6 S.S. Universal Colloid Mill; Premier U-5 Mills S.S. 3/5 H.P. Motors; Carrier 8 Truck Dryer; Barrett Dumping Elevator; Belt Conveyors 10' to 60" w/10" to 15" Belts; S. & S. Auger Fillers, Semi & Automatic; Micro Bantam S.S. Pulverizer; Raymond 16" Screen Mill 5 H.P.; Rotex Screens 20" x 48" to 40" x 120"; Powder Mixers 100 to 2000 lbs.; Glascote 750 Gal. Glass Lined Jack. Kettle; 5 Pfaudler 100 Gal. Closed G. L. Tanks—New; Stainless Steel Kettles & Tanks, Labelers, Liq. Fillers etc. Send for complete listings. We buy single items or complete plants. THE MACHINERY & EQUIPMENT CORP., 533 W. Broadway, New York 12, N. Y. GRamercy 5-6680.

Situations Wanted

At present SUCCESSFUL TECHNICAL DIRECTOR medium sized diversified pharmaceutical manufacturer, charge of research and development, production and control, seeks position with future. 35 years, adaptable, able technologist, scientist, administrator. M. S., Ph.D. (Biochemistry-Microbiology) and 3 years medical school. Box J-5, DRUG & COSMETIC INDUSTRY.

Business Opportunities

PAKISTAN: Agencies for USA products wanted. Send literature samples if possible. Inquiries for export from Pakistan invited. WESTERN TRADES CO., 38 Lakshami Building, Karachi, (Pakistan).

FOR SALE: 2465 Atlantic Ave. Brooklyn (corner Van Sinderen Ave.). Modernized building, income producing. Street floor and basement immediately available for purchaser. Mr. S. Ostrow, 16 Court St., Brooklyn UL. 5-0206.

SWISS FIRM, now distributors of famous French perfume line, seeks a second agency for perfumery, beauty products, cosmetics or specialties. Write: PROPARLY S. A. 10, rue de la Muse, Geneva.

WILL BUY trademarked proprietaries, state 1954 sales, present inventory, asking price for firm. Random, 204 Lloyd St., Baltimore, Md.

MANUFACTURER'S REPRESENTATIVES WANTED for West Coast and Midwest. To represent fast-growing, dynamic cosmetic and pharmaceutical private label manufacturer. The organizations we seek must have knowledge of technical and merchandising needs of customers. Write in detail giving number of salesmen, territory covered, and description of lines currently handled. Box MA-1, DRUG & COSMETIC INDUSTRY.

WHAT'S YOUR TROUBLE? Cosmetic Chemist long experience can help you. Tell me what you want, I will send you finished samples and price of formulas before you buy. Have Creme Rinse, Creme Shampoo, Concentrated Shampoo Powder. Lanolin permanent wave creme and many others. COSMETIC CHEMIST, 1112 Chemical Bldg., St. Louis 1, Mo.

MANUFACTURING LABORATORY 62,000 Sq. Ft. on 37 acres. Conveniently located in SE Wisconsin, 60 minutes to Chicago. Adequate trained personnel available in vicinity. Steam, gas, electricity, water, refrigerated incubating rooms available. Three residences on premises. Priced for quick sale. Box J-2, DRUG & COSMETIC INDUSTRY.

SODIUM POTASSIUM SACCHARATE
$NaOOC(CHOH)_4$ COOK
INDUSTRIAL AND PHARMACEUTICAL
For sequestering metallic ions
Ferrous, Ferric, Calcium and
other salts available
For further information write to
READING *Testing Laboratories,* INC.
Reading, Penna.

MEXICO
Our manufacturing facilities and sales organization will guarantee American techniques in merchandising your product or line. We have established distribution to the drug and cosmetic trade in the entire country. If your product or line is not in Mexico, and should be, or is in Mexico and not doing what it should, then you should contact:
A. A. Vann, Pres.
VANTONE, S. A.
LIVERPOOL 179 MEXICO D. F. MEXICO

PROTOVERATRINE A AND B
MALEATE TABLETS
0.5 MGM
NYSCO LABORATORIES inc.
22-14 40th Ave.
long island city, N. Y.
Tel. RAvenswood 9-6960
Now available for immediate delivery.
A potent purified alkaloid for use in the treatment of hypertension.
Write or call for June 1955 issue of NYSCO NEWS & NOTES
Cable: NYSCOLAB N. Y.

The C. E. Ising Corporation
Manufacturing Chemists
AROMATIC PRODUCTS
"I.G." ("ISING" GERMICIDE)
SOAPS FOR KENNELS
AND INDUSTRIES
MASKING ODORS FOR INDUSTRIES
FOUNDED 1908
FLUSHING NEW YORK

Use **LABELS** AND **SEALS..**
by
JOHN HORN
835 - 839 TENTH AVENUE
NEW YORK 19, N. Y.
FOR OVER FIFTY YEARS
for greater sales appeal
METAL • EMBOSSED • ENGRAVED
DIE STAMPING FOR BOXMAKERS

Aromatic Chemicals
FOR PERFUMERY AND FLAVORS
Isopropyl Quinoline • Isobutyl Quinoline
Ethyl Anthranilate • Isobutyl Anthranilate
Diacetyl • Acetyl Propionyl • Acetoin
FAIRMOUNT
CHEMICAL CO., INC.
600 FERRY STREET • NEWARK 5, N. J.

HIGH GRADE
COSMETIC POWDERS
Tamms
• Powdered Talc • Infusorial Earth
• English Kaolin • Clay and Silica
• Precipitated Chalk
Write us about your special needs.
Send for prices and samples.
TAMMS INDUSTRIES, INC., Dept. RM-11, 228 N. La Salle St., Chicago 1

MOULDS
for
LIPSTICKS
MASCARO
SUPPOSITORIES
STYPTIC PENCILS
and
DIES
for
ROUGE
COMPACT POWDER
Write for Catalog
A. CAVALLA, INC. 163 WEST 18TH STREET, NEW YORK, 11, N.Y.

CAMILLI, ALBERT & LALOUE S.A.

Grasse, France **Established 1830**

Natural Perfumer's Materials Stocked by Our American Affiliate

Mimosa

Jasmin

Tuberose

Rose

MAXIMAROME

ESSENCES

ALMOND OIL, BITTER F.P.A.
ANGELICA
BASIL GRASSE
BERGAMOT
CHAMOMILLE Roman
CARROT
CELERY from Seeds
CLARY SAGE
CORIANDER
COSTUS
CYSTE
GALBANUM
HYSSOP
LAVENDER
LAVANDIN
LOVAGE
MELISSA
NIAOULI Natural
OLIBANUM
OPOPONAX
ORANGE, Bitter
OTTO OF ROSE
PATCHOULY
PEPPER Black
PETITGRAIN
ROSEMARY
SANDALWOOD
TARRAGON
TANGERINE
THYME
VERBENA
VETIVERT
YLANG YLANG

CAMILLI, ALBERT & LALOUE, INC.

14 East 48th Street **New York 17, N. Y.**

Phone PLaza 3-6070

ADVERTISING INDEX

American Aromatics, Inc. 108
American Cholesterol Products, Inc. 112-113
American Cyanamid Company — Fine Chemicals Div. 15
Anchor Hocking Glass Company 66-67
Aromatic Products, Inc. ..... Insert facing 24
Atlas Power Company ..... Insert facing 32

Baker Chemical Co., J. T. 102
Barr & Company, G. 70
Beauty Fashion 24
Bertrand Freres, Inc. 21
Bush & Co., W. J. 104

Camilli, Albert & Laloue, Inc. 140
Carr-Lowrey Glass Co. 54
Cavalla, Inc., A. 130
Chaleyer, Inc., Ph. 13
Chiris Co., Inc., Antoine 96
Colton Company, Arthur 90, 137
Commercial Solvents Corp. 18
Continental Can Company ..... 58, facing 60
Continental Filling Corporation 52
Croda Incorporated 104

Devold Oil Co., Peder 123
Distillation Products Industries 28
Dow Chemical Co. ..... 26 and 94
Dreyer, P. R. Inc. ..... Insert facing 25
Dunkel & Co., Inc., Paul A. 125
Durlin Co. ..... Insert bet. 24-25

Eastman Chemical Products, Inc. 121
Emery Industries, Inc. 10
Ertel Engineering 92

Fairmount Chemical Co. 130
Felton Chemical Co., Inc. 12
Firmenich & Co., Inc. ..... Insert bet. 76-77
Florasynth Labs., Inc. 8

General Chemical Division, Allied Chemical & Dye Corp. 63
Givaudan-Delawanna, Inc. ..... Insert bet. 32-33
Glass Products Company 133
Gottscho, Inc., Adolph 108

Halby Products Co. 108
Haring Equipment Corp. 128
Hazel-Atlas Glass Company ..... Insert facing 61
Heyden Chemical Corp. 82
Hoffmann-La Roche, Inc. 1, 98
Hormann & Co., F. R. 123
Horn, John 130
Hotel Raleigh 116
Huisking & Co., Inc., Chas. I. 123

Ising Corp., C. E. 130

Kelco Company 127
Kiefer Machine Co., Karl 92
Kolar Laboratories, Inc. 20
Kolmar Laboratories 106

Lautier Fils 100
Lueders & Co., George 16

Mallinckrodt Chemical Works ..... Insert facing 33
Mathieu, Inc., Charles 128
Merck & Co., Inc. 4, 9
Millsplastic Division—Continental Can Co. ..... Insert facing 60
Morningstar, Nicol, Inc. 72

National Aniline Div., Allied Chemical & Dye Corp. ..... Insert bet. 24-25
New Jersey Zinc Co. 117
New York Quinine & Chemical Works, Inc. 11
Norda Essential Oil & Chemical ..... Cover 2
Nysco Laboratories, Inc. 130

Old Empire Mfg. Chemists, Inc. 129
Onyx Oil & Chemical Company 110-111
Owens-Illinois 50-51

Pantone Press 135
Parsons-Plymouth, Inc., M. W. 115
Partition Manufacturing Co. 116
Pennsylvania Glass Products Co., Inc. 56
Perl Machine Mfg. Co. 135
Pfaltz & Bauer Co., Inc. 137
Pfizer & Co., Inc., Chas. ..... Cover 4
Plax Corporation ..... Insert facing 64
Polak & Schwarz, Inc. 22
Poly Perm Printing, Inc. 125
Popper & Sons, Inc. 92
Precision Valve Corp. 86
Private Label Cosmetics 119
Progressive Labelling Machine Inc. 137

Reading Testing Laboratories, Inc. 139
Reheis Co., Inc. 118
Richford Corporation 68
F. Ritter & Company 108
Rohm and Haas Company 14
Roure-Dupont, Inc. ..... Insert bet. 16-17

Santonin Company of America 123
Sheffield Tube Corp. ..... Insert facing 65
Shell Chemical Corp. 74
Shellmar Bettner Division, Continental Can Co. 58
Sindar Corporation 80
Sonneborn Sons, Inc. 5
Standard Pharmacal Co. 131
Sterwin Chemicals, Inc. 3
Stokes Machine Co., F. J. 84
Strong Cobb & Co., Inc. 23
Swift & Co. 19
Synfleur Scientific Labs. 30

Tamms Industries, Inc. 139

Ungerer & Co., Inc. ..... Cover 3
U. S. Bottlers Machine Co. 88

Valcourt, Inc. 129
van Ameringen-Haebler, Inc. 6-7
Van Dyk & Company, Inc. 131
Vantone, S. A. 139
Verona Chemical Co. 78
Vitamerican Oil Corp. 133

Will & Baumer Candle Co. 17

Since 1893 a leader among Manufacturers,
Importers and Suppliers of Basic Materials
for Perfume and Perfume Specialties

Ungerer & Co.

161 Sixth Ave., New York 13, N. Y.
Plant and Laboratories: Totowa, N. J.

CHICAGO • BOSTON • PHILADELPHIA • ST. LOUIS • LOS ANGELES • ATLANTA

PFIZER VITAMIN A...PFIZER HORMONES

In the formulation of lotions, creams and other preparations promoting skin beauty and skin "nourishment"—look to Pfizer for quality and technical assistance second to none. In such leading Pfizer bulk products as Vitamin A and pure crystalline hormones, you'll find a large variety of product possibilities. And Pfizer, world's largest producer of antibiotics, offers cosmetic manufacturers several of these antibacterial agents for experimental use. We're eager and ready to serve you, even if your product is only in the "talking stage."

Manufacturing Chemists for Over 100 Years

Pfizer

CHAS. PFIZER & CO., INC.
Chemical Sales Division
630 Flushing Ave., Brooklyn 6, N.Y.
Branch Offices: Chicago, Ill.; San Francisco, Calif.; Vernon, Calif.; Atlanta, Ga.

n...

s

rers